n08
405

DEC 12 1991

N S1.55: G75/990

(Seid)

# Selected Data
# on
# Graduate Students and Postdoctorates
# in
# Science and Engineering: Fall 1990

3/13

Science and Engineering Education Program
Division of Science Resources Studies
National Science Foundation

NSF 91-320

(395)

# Selected Data
# on
# Graduate Students and Postdoctorates
# in
# Science and Engineering: Fall 1990

1991

Project Monitor: J. G. Huckenpöhler

Science and Engineering Education Program
Division of Science Resources Studies
National Science Foundation

NSF 91-320

## Suggested Citation

National Science Foundation, *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990*, NSF 91-320 (Washington, D.C., 1991).

## Availability of Publications

Single copies are available gratis from the Division of Science Resources Studies, National Science Foundation, Washington, D.C. 20550. See page viii for availability on the Science and Technology Information System (STIS).

## Telephonic Device for the Deaf

The National Science Foundation has Telephonic Device for the Deaf (TDD) capability, which enables individuals with hearing impairments to communicate with the Division of Personnel Management about NSF programs, employment, or general information. This number is (202) 357-7492.

## GENERAL NOTES

Data presented in these tables are derived from the National Science Foundation/National Institutes of Health Survey of Graduate Science and engineering Students and Postdoctorates, Fall 1990. Unless otherwise specified, the published data represent estimates of total enrollment in science and engineering (S&E) programs in approximately 10,400 graduate departments at some 730 institutions in the United States and outlying areas.

All eligible institutions were included in the survey population in 1988, 1989, and 1990. From 1984 through 1987, the surveys were conducted on a stratified random sample basis, with all doctorate-granting institutions and all master's-granting Historically Black Colleges and Universities (HBCU's) included in the certainty stratum. Data for the remaining master's-granting institutions were divided into two sample strata based on size of enrollment. Data for sampled institutions were re-estimated in 1988 on the basis of 1983 and 1988 data. During the 1989 survey cycle, S/E field definitions were reviewed and some subfields were deleted. Data for 1975 through 1988 were adjusted to conform to the revised definitions.

In addition, institutions may revise their data for earlier years. For these reasons, only the latest trend data should be used in historical analyses.

**Complete technical notes will appear in the full *Detailed Statistical Tables* publication, to be released later this year.** For further information on data availability. please contact the Project Monitor:

J. G. Huckenpöhler
Program Analyst
Division of Science Resources Studies
Room L-611
National Science Foundation
1800 G Street, N.W.
Washington, D. C. 20550

(202) 634-6082

BLANK PAGE

## DATA SUMMARY

- Total graduate enrollment in the science, engineering, and health fields reached nearly 459,000 in fall 1990, the largest single-year increase in recent years--more than 4 percent over the fall 1989 total. The increase was sharpest in the health fields, more than 6 percent, compared to a 4-percent growth in both science fields and engineering fields.

- Psychology students increased the most rapidly of those in any science field, 6 percent. Growth was slowest in the agricultural sciences, just over 1 percent. The social sciences continued to be the most popular field, with 78,600 graduate students or more than one-sixth of the total. Nearly one-third of the engineering graduate students, 34,900, were enrolled in electrical engineering.

- The number of graduate students enrolled part time increased at a more rapid rate than did the number enrolled full time, 6 percent compared to just over 3 percent. Part-time students made up about one-third of all S&E graduate students.

- Enrollment in doctorate-granting institutions, at 398,400, represented 87 percent of all graduate students. This proportion has varied only slightly since the survey series began in 1975.

---

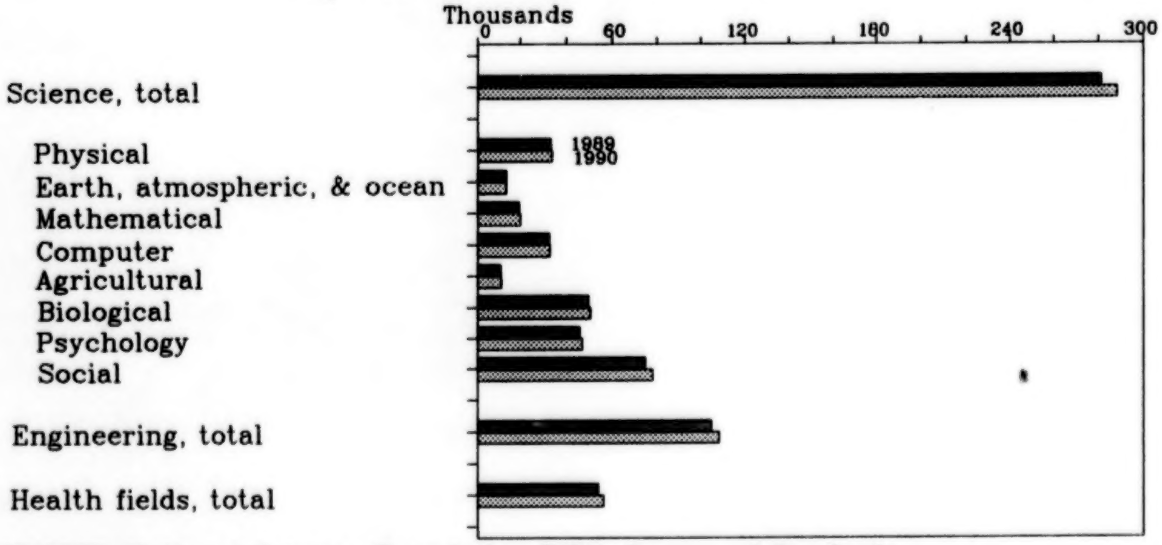
Survey responses were received from 98% of the 610 institutions granting advanced S&E degrees. Since respondent institutions may revise data for earlier years, only the latest trend data should be used in historical analyses.

---

Quantum Research Corporation completed the data collection in July 1991 and had finalized tabulations by September 1991. For information on obtaining data on diskettes, call SRS at (202) 634-4634.

---

Graduate S&E enrollment in all institutions, by field: 1989 and 1990



SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

BLANK PAGE

## DATA TAPES

For those wishing to access graduate student data at the individual department level, the data processing contractor, Quantum Research Corporation, has made available single- and multiyear data tapes at a cost of $100 for the first year's data and $35 for each additional year. A description of the data available on these tapes may be found in the *Guide to the National Science Foundation's Surveys of Academic Science and Engineering;* information on the formats of the tapes, and the order blanks, are available in the *Supplemental Guide to Data Tapes from the National Science Foundation's Surveys of Academic Science and Engineering.* Both of these publications may be obtained by calling NSF's Division of Science Resources Studies at (202) 634-4673.

## CASPAR SYSTEM

Institutional planners are now able to acquire data from several academic S&E resources on CD-ROM compact disk.

The compact disk contains the Computer-Aided Science Policy Analysis and Research (CASPAR) database system which is an easy-to-use tool for retrieval and analysis of statistical data on academic S&E resources. CASPAR provides the analyst with an extensive and growing data library with multiyear statistics on the state of higher education in general, and on academic S&E resources specifically. This data library is based on a set of standardized institutional and field of science definitions across the multiple sources used to develop the database. The CASPAR program includes built-in help capabilities to facilitate the use and interpretation of the data.

CASPAR data are drawn from a number of sources. All are available for individual institutions, by State, and at the national level. Longitudinal data from surveys of universities and colleges conducted by the NSF Division of Science Resources Studies include the R&D expenditures survey, Federal support survey, and the graduate student survey. Data from surveys of universities and colleges conducted by the National Center for Education Statistics include Earned Degrees, Opening Fall Enrollment, Faculty Salaries, Tenure and Fringe Benefits, and Financial Statistics. Data from other sources include the National Research Council Doctorate Program Ratings.

For additional information on CASPAR write to the following address:

Quantum Research Corporation
7300 Pearl Street, Suite 210
Bethesda, Md. 20814

Telephone (301) 657-3070.

# STIS:

## *Free Online Information on the National Science Foundation*

**The National Science Foundation (NSF) Now Has An Electronic Publishing System Called "STIS" — The Science And Technology Information System. Anyone Can Use It To Get Fast, 24-hour Data On Many NSF Activities.**

### How Does It Work?

With STIS, you need only a personal computer and a modem, or access to Internet, the computer network linking thousands of researchers and others.* You can electronically search keywords, topics, or phrases, then read and print out the materials you want. They cover science, mathematics, engineering, and technology activities supported by NSF, with new materials added weekly. STIS has online "help" screens, and up to 10 people can be on the system at the same time. Users pay a phone charge only if calling long distance.

### What Kind Of Data Does STIS Offer?

- NSF program announcements and "how-to" grants booklet
- grant lists and summaries
- press releases, feature stories, tipsheets for the media
- newsletters and periodicals (e.g., NSF Bulletin, NSF Directions)
- catalogs and directories (annual Guide to Programs, NSF telephone book)
- vacancy announcements, NSF organizational information
- news on international science and technology
- NSF Annual Report, National Science Board special reports

### When Is STIS Available?

There are no limited hours of access, and there's no need to register in advance or get a password. STIS is open to all.

### For More Information

Request the STIS basic instruction flyer (NSF 91-10) from pubs@nsf.gov (internet) or pubs@nsf (Bitnet). Log on as described below.* For additional help, contact:

Dr. STIS
National Science Foundation
Rm 401 (Office of Information
Systems)
1800 G St. NW
Washington, DC 20550

Phone: (202)357-7555
FAX: (202)357-7663

TDD: (202)357-7492
(Telephonic Device for the Deaf)

* Dial in at 1200, 2400, or 9600 Baud. Set Parity=Even, Data Bits=7, Duplex=Full, and Emulation=VT-100. Use phone numbers (202) 357-0359 or (202) 357-0360. At "connect," press: [enter] [.] [enter]. At "login," type: [public]. On the Internet, type [telnet stis.nsf.gov] or [telnet 128.150.195.40]. At "login," type: [public]. Access to files using e-mail is also available (e.g., for Bitnet users).

# LIST OF TABLES

Page

1. Science and engineering graduate students by field and enrollment status in all institutions according to highest degree granted: 1990 ........ 1

2. Science and engineering graduate students in all institutions by field and citizenship, and by racial/ethnic background of U.S. citizens: 1990 ........ 2

3. Full-time science and engineering graduate students by source and type of major support in all institutions according to highest degree granted: 1975-90 ........ 3

4. Science and engineering graduate students in all institutions by field: 1975-90 ........ 4

5. Science and engineering graduate students in all institutions by field: 1982-90 ........ 6

6. Male science and engineering graduate students in all institutions by field: 1982-90 ........ 7

7. Female science and engineering graduate students in all institutions by field: 1982-90 ........ 8

8. Science and engineering graduate students in all institutions by enrollment status, citizenship, and racial/ethnic background: 1982-90 ........ 9

9. Full-time science and engineering graduate students in all institutions by field: 1982-90 ........ 10

10. Full-time science and engineering graduate students in all institutions by field and source of major support: 1982-90 ........ 11

11. Full-time science and engineering graduate students in all institutions by type and source of major support: 1982-90 ........ 15

12. Full-time science and engineering graduate students with U.S. citizenship in all institutions by field: 1982-90 ........ 17

13. Full-time science and engineering graduate students without U.S. citizenship in all institutions by field: 1982-90 ........ 18

14. Part-time science and engineering graduate students in all institutions by field: 1982-90 ........ 19

15. Science and engineering graduate students in doctorate-granting institutions by field: 1982-90 ........ 20

16. Science and engineering graduate students in doctorate-granting institutions by geographic distribution: 1982-90 ........ 21

Page

17. Full-time science and engineering graduate students in doctorate-granting institutions by field: 1982-90 .......... 22

18. Part-time science and engineering graduate students in doctorate-granting institutions by field: 1982-90 .......... 23

19. Science and engineering graduate students in master's-granting institutions by field: 1982-90 .......... 24

20. Full-time science and engineering graduate students in master's-granting institutions by type and source of major support: 1982-90 .......... 25

21. Part-time science and engineering graduate students in master's-granting institutions by field: 1982-90 .......... 26

22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990 .......... 27

23. Graduate science and engineering enrollment in doctorate-granting institutions, ranked by total graduate science/engineering enrollment: 1983-90 .......... 38

24. Science and engineering postdoctoral appointees in doctorate-granting institutions by field and source of support, and number of postdoctoral appointees who were U.S. citizens: 1990 .......... 44

25. Science and engineering postdoctoral appointees in doctorate-granting institutions by field: 1982-90 .......... 45

## SURVEY MATERIALS

Instructions for Survey of Graduate Science and Engineering Students and Postdoctorates, fall 1990 .......... 48

Survey of Graduate Students and Postdoctorates in Science and Engineering, Fall 1990: Departmental or Program Data Sheet (NSF Form 812) .......... 50

Crosswalk between NSF discipline codes and the NCES Classification of Instructional Programs .......... 52

## Table 1. Science and engineering graduate students by field and enrollment status in all institutions according to highest degree granted: 1990

| Field | In all institutions | | | Doctorate-granting | | | Master's-granting | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time |
| Total, all surveyed fields | 458,943 | 295,836 | 163,107 | 398,405 | 275,262 | 123,143 | 60,538 | 20,574 | 39,964 |
| Total, science/engineering fields | 401,569 | 267,621 | 133,948 | 350,013 | 250,013 | 100,000 | 51,556 | 17,608 | 33,948 |
| Engineering, total | 109,299 | 66,547 | 42,752 | 100,253 | 64,169 | 36,084 | 9,046 | 2,378 | 6,668 |
| Aerospace | 4,006 | 3,010 | 996 | 3,915 | 2,946 | 969 | 91 | 64 | 27 |
| Agricultural | 939 | 793 | 146 | 939 | 793 | 146 | 0 | 0 | 0 |
| Biomedical | 2,130 | 1,798 | 332 | 2,067 | 1,761 | 306 | 63 | 37 | 26 |
| Chemical | 6,734 | 5,453 | 1,281 | 6,618 | 5,420 | 1,198 | 116 | 33 | 83 |
| Civil | 15,891 | 10,445 | 5,446 | 14,773 | 10,164 | 4,609 | 1,118 | 281 | 837 |
| Electrical | 33,887 | 18,710 | 15,177 | 30,453 | 17,879 | 12,574 | 3,434 | 831 | 2,603 |
| Engineering science | 2,547 | 1,332 | 1,215 | 2,529 | 1,321 | 1,208 | 18 | 11 | 7 |
| Industrial | 11,816 | 4,966 | 6,850 | 10,288 | 4,543 | 5,745 | 1,528 | 423 | 1,105 |
| Mechanical | 16,879 | 10,843 | 6,036 | 15,511 | 10,505 | 5,006 | 1,368 | 338 | 1,030 |
| Metallurgical/materials | 4,822 | 3,848 | 974 | 4,684 | 3,824 | 860 | 138 | 24 | 114 |
| Mining | 437 | 334 | 103 | 409 | 306 | 103 | 28 | 28 | 0 |
| Nuclear | 1,278 | 1,080 | 198 | 1,278 | 1,080 | 198 | 0 | 0 | 0 |
| Petroleum | 670 | 484 | 186 | 656 | 475 | 181 | 14 | 9 | 5 |
| Engineering, n.e.c. | 7,263 | 3,451 | 3,812 | 6,133 | 3,152 | 2,981 | 1,130 | 299 | 831 |
| Sciences, total | 292,270 | 201,074 | 91,196 | 249,760 | 185,844 | 63,916 | 42,510 | 15,230 | 27,280 |
| Physical sciences | 34,337 | 29,573 | 4,764 | 32,504 | 28,845 | 3,659 | 1,833 | 728 | 1,105 |
| Astronomy | 811 | 790 | 21 | 811 | 790 | 21 | 0 | 0 | 0 |
| Chemistry | 19,142 | 16,390 | 2,752 | 18,059 | 15,988 | 2,071 | 1,083 | 402 | 681 |
| Physics | 13,985 | 12,222 | 1,763 | 13,392 | 11,931 | 1,461 | 593 | 291 | 302 |
| Physical sciences, n.e.c. | 399 | 171 | 228 | 242 | 136 | 106 | 157 | 35 | 122 |
| Earth, atmospheric, and ocean sciences | 14,159 | 10,295 | 3,864 | 12,866 | 9,848 | 3,018 | 1,293 | 447 | 846 |
| Atmospheric sciences | 929 | 828 | 101 | 925 | 828 | 97 | 4 | 0 | 4 |
| Geosciences | 7,742 | 5,808 | 1,934 | 7,199 | 5,574 | 1,625 | 543 | 234 | 309 |
| Oceanography | 2,252 | 1,853 | 399 | 2,117 | 1,798 | 319 | 135 | 55 | 80 |
| Earth, atmos., and ocean sci., n.e.c. | 3,236 | 1,806 | 1,430 | 2,625 | 1,648 | 977 | 611 | 158 | 453 |
| Mathematical sciences | 19,884 | 13,870 | 6,014 | 17,297 | 13,202 | 4,095 | 2,587 | 668 | 1,919 |
| Computer sciences | 34,507 | 16,872 | 17,635 | 27,667 | 14,701 | 12,966 | 6,840 | 2,171 | 4,669 |
| Agricultural sciences | 11,183 | 8,961 | 2,222 | 10,445 | 8,552 | 1,893 | 738 | 409 | 329 |
| Biological sciences | 50,921 | 41,685 | 9,236 | 47,054 | 40,132 | 6,922 | 3,867 | 1,553 | 2,314 |
| Anatomy | 1,011 | 922 | 89 | 1,011 | 922 | 89 | 0 | 0 | 0 |
| Biochemistry | 5,153 | 4,936 | 217 | 5,119 | 4,921 | 198 | 34 | 15 | 19 |
| Biology | 13,258 | 9,340 | 3,918 | 10,285 | 8,109 | 2,176 | 2,973 | 1,231 | 1,742 |
| Biometry/epidemiology | 1,966 | 1,264 | 702 | 1,966 | 1,264 | 702 | 0 | 0 | 0 |
| Biophysics | 642 | 605 | 37 | 642 | 605 | 37 | 0 | 0 | 0 |
| Botany | 2,884 | 2,471 | 413 | 2,833 | 2,428 | 405 | 51 | 43 | 8 |
| Cell biology | 2,592 | 2,515 | 77 | 2,592 | 2,515 | 77 | 0 | 0 | 0 |
| Ecology | 1,177 | 890 | 287 | 1,083 | 884 | 199 | 94 | 6 | 88 |
| Entomology/parasitology | 1,194 | 1,015 | 179 | 1,194 | 1,015 | 179 | 0 | 0 | 0 |
| Genetics | 1,408 | 1,317 | 91 | 1,364 | 1,275 | 89 | 44 | 42 | 2 |
| Microbiology | 4,874 | 4,365 | 509 | 4,812 | 4,351 | 461 | 62 | 14 | 48 |
| Nutrition | 4,259 | 2,920 | 1,339 | 3,951 | 2,813 | 1,138 | 308 | 107 | 201 |
| Pathology | 1,424 | 1,144 | 280 | 1,357 | 1,116 | 241 | 67 | 28 | 39 |
| Pharmacology | 2,438 | 2,294 | 144 | 2,438 | 2,294 | 144 | 0 | 0 | 0 |
| Physiology | 2,276 | 2,116 | 160 | 2,276 | 2,116 | 160 | 0 | 0 | 0 |
| Zoology | 2,110 | 1,683 | 427 | 2,097 | 1,677 | 420 | 13 | 6 | 7 |
| Biosciences, n.e.c. | 2,255 | 1,888 | 367 | 2,034 | 1,827 | 207 | 221 | 61 | 160 |
| Psychology | 48,659 | 30,992 | 17,667 | 34,685 | 24,930 | 9,755 | 13,974 | 6,062 | 7,912 |
| Social sciences | 78,620 | 48,826 | 29,794 | 67,242 | 45,634 | 21,608 | 11,378 | 3,192 | 8,186 |
| Agricultural economics | 2,273 | 1,961 | 312 | 2,232 | 1,934 | 298 | 41 | 27 | 14 |
| Anthropology | 6,494 | 4,741 | 1,753 | 6,244 | 4,658 | 1,586 | 250 | 83 | 167 |
| Economics (except agricultural) | 12,432 | 9,346 | 3,086 | 11,668 | 9,073 | 2,595 | 764 | 273 | 491 |
| Geography | 3,618 | 2,429 | 1,189 | 2,938 | 2,191 | 747 | 680 | 238 | 442 |
| History and philosophy of science | 370 | 340 | 30 | 370 | 340 | 30 | 0 | 0 | 0 |
| Linguistics | 3,533 | 2,586 | 947 | 3,049 | 2,536 | 513 | 484 | 50 | 434 |
| Political science | 30,698 | 15,472 | 15,226 | 24,414 | 13,830 | 10,584 | 6,284 | 1,642 | 4,642 |
| Sociology | 7,756 | 5,679 | 2,077 | 6,940 | 5,336 | 1,604 | 816 | 343 | 473 |
| Sociology/anthropology | 1,212 | 782 | 430 | 1,125 | 744 | 381 | 87 | 38 | 49 |
| Social sciences, n.e.c. | 10,234 | 5,490 | 4,744 | 8,262 | 4,992 | 3,270 | 1,972 | 498 | 1,474 |
| Total, health fields | 57,374 | 28,215 | 29,159 | 48,392 | 25,249 | 23,143 | 8,982 | 2,966 | 6,016 |
| Dentistry | 969 | 840 | 129 | 969 | 840 | 129 | 0 | 0 | 0 |
| Neurology | 810 | 788 | 22 | 790 | 778 | 12 | 20 | 10 | 10 |
| Nursing | 21,320 | 6,126 | 15,194 | 18,242 | 5,444 | 12,798 | 3,078 | 682 | 2,396 |
| Pharmaceutical sciences | 2,963 | 2,137 | 826 | 2,961 | 2,137 | 824 | 2 | 0 | 2 |
| Preventive medicine/community health | 8,261 | 4,500 | 3,761 | 8,073 | 4,442 | 3,631 | 188 | 58 | 130 |
| Speech pathology/audiology | 8,608 | 5,840 | 2,768 | 6,441 | 4,596 | 1,845 | 2,167 | 1,244 | 923 |
| Veterinary sciences | 900 | 709 | 191 | 881 | 698 | 183 | 19 | 11 | 8 |
| Clinical medicine, n.e.c. | 1,839 | 1,431 | 408 | 1,673 | 1,384 | 289 | 166 | 47 | 119 |
| Health related, n.e.c. | 11,704 | 5,844 | 5,860 | 8,362 | 4,930 | 3,432 | 3,342 | 914 | 2,428 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 2. Science and engineering graduate students in all institutions by field and citizenship, and by racial/ethnic background of U.S. citizens: 1990

| Field | Total | Racial/ethnic background of U.S. citizens | | | | | | Non-U.S. citizens |
|---|---|---|---|---|---|---|---|---|
| | | Black non-Hispanic | American Indian/ Alaskan Native | Asian/ Pacific Islander | Hispanic | White non-Hispanic | Other or unknown | |
| Total, all surveyed fields | 458,943 | 15,473 | 1,270 | 19,195 | 12,569 | 285,997 | 17,675 | 106,764 |
| Total, science/engineering fields | 401,569 | 12,891 | 1,048 | 17,474 | 10,502 | 241,210 | 15,985 | 102,459 |
| Engineering, total | 109,299 | 1,810 | 157 | 6,775 | 1,955 | 54,341 | 6,134 | 38,127 |
| Aerospace | 4,006 | 38 | 6 | 169 | 51 | 2,341 | 215 | 1,186 |
| Agricultural | 939 | 4 | 1 | 23 | 17 | 383 | 5 | 506 |
| Biomedical | 2,130 | 30 | 2 | 137 | 28 | 1,222 | 35 | 676 |
| Chemical | 6,734 | 84 | 5 | 343 | 149 | 3,163 | 72 | 2,918 |
| Civil | 15,891 | 237 | 38 | 779 | 322 | 7,851 | 643 | 6,021 |
| Electrical | 33,887 | 610 | 49 | 3,009 | 578 | 15,728 | 2,368 | 11,545 |
| Engineering science | 2,547 | 35 | 6 | 141 | 17 | 1,599 | 54 | 695 |
| Industrial | 11,816 | 308 | 24 | 459 | 271 | 6,773 | 837 | 3,144 |
| Mechanical | 16,879 | 246 | 15 | 803 | 278 | 8,291 | 1,189 | 6,057 |
| Metallurgical/materials | 4,822 | 53 | 2 | 273 | 73 | 2,274 | 151 | 1,996 |
| Mining | 437 | 2 | 0 | 16 | 3 | 172 | 6 | 238 |
| Nuclear | 1,278 | 7 | 2 | 27 | 24 | 672 | 10 | 536 |
| Petroleum | 670 | 6 | 0 | 18 | 11 | 265 | 3 | 367 |
| Engineering, n.e.c. | 7,263 | 150 | 7 | 578 | 133 | 3,607 | 546 | 2,242 |
| Sciences, total | 292,270 | 11,081 | 891 | 10,699 | 8,547 | 186,869 | 9,851 | 64,332 |
| Physical sciences | 34,337 | 653 | 63 | 1,217 | 641 | 18,570 | 682 | 12,511 |
| Astronomy | 811 | 8 | 2 | 38 | 7 | 549 | 15 | 192 |
| Chemistry | 19,142 | 451 | 44 | 701 | 425 | 10,498 | 433 | 6,590 |
| Physics | 13,985 | 177 | 16 | 467 | 202 | 7,251 | 214 | 5,658 |
| Physical sciences, n.e.c. | 399 | 17 | 1 | 11 | 7 | 272 | 20 | 71 |
| Earth, atmospheric, and ocean sciences | 14,159 | 125 | 30 | 267 | 241 | 10,476 | 303 | 2,717 |
| Atmospheric sciences | 929 | 9 | 0 | 26 | 9 | 597 | 7 | 281 |
| Geosciences | 7,742 | 52 | 21 | 116 | 129 | 5,755 | 155 | 1,514 |
| Oceanography | 2,252 | 21 | 1 | 40 | 60 | 1,551 | 36 | 543 |
| Earth, atmos., and ocean sci., n.e.c. | 3,236 | 43 | 8 | 85 | 43 | 2,573 | 105 | 379 |
| Mathematical sciences | 19,884 | 512 | 20 | 900 | 370 | 10,705 | 936 | 6,441 |
| Computer sciences | 34,507 | 984 | 42 | 2,864 | 566 | 17,436 | 1,886 | 10,729 |
| Agricultural sciences | 11,183 | 178 | 20 | 271 | 293 | 7,163 | 271 | 2,987 |
| Biological sciences | 50,921 | 1,263 | 137 | 2,314 | 1,237 | 33,180 | 1,064 | 11,726 |
| Anatomy | 1,011 | 25 | 1 | 64 | 16 | 677 | 8 | 220 |
| Biochemistry | 5,153 | 76 | 6 | 294 | 89 | 2,980 | 37 | 1,671 |
| Biology | 13,258 | 427 | 33 | 547 | 452 | 9,202 | 518 | 2,079 |
| Biometry/epidemiology | 1,966 | 76 | 2 | 86 | 73 | 1,311 | 6 | 412 |
| Biophysics | 642 | 5 | 2 | 57 | 7 | 368 | 2 | 201 |
| Botany | 2,884 | 49 | 7 | 64 | 31 | 1,729 | 43 | 961 |
| Cell biology | 2,592 | 34 | 4 | 121 | 88 | 1,756 | 34 | 555 |
| Ecology | 1,177 | 13 | 3 | 16 | 26 | 889 | 11 | 219 |
| Entomology/parasitology | 1,194 | 16 | 8 | 43 | 32 | 722 | 28 | 345 |
| Genetics | 1,408 | 25 | 1 | 71 | 12 | 988 | 8 | 303 |
| Microbiology | 4,874 | 87 | 20 | 243 | 114 | 3,097 | 98 | 1,215 |
| Nutrition | 4,259 | 134 | 17 | 174 | 71 | 2,574 | 85 | 1,204 |
| Pathology | 1,424 | 41 | 4 | 66 | 20 | 926 | 49 | 318 |
| Pharmacology | 2,438 | 76 | 11 | 170 | 55 | 1,481 | 40 | 605 |
| Physiology | 2,276 | 66 | 5 | 156 | 44 | 1,354 | 48 | 603 |
| Zoology | 2,110 | 44 | 7 | 36 | 33 | 1,633 | 28 | 329 |
| Biosciences, n.e.c. | 2,255 | 69 | 6 | 106 | 74 | 1,493 | 21 | 486 |
| Psychology | 48,659 | 2,289 | 236 | 964 | 2,159 | 39,511 | 1,660 | 1,840 |
| Social sciences | 78,620 | 5,077 | 343 | 1,902 | 3,040 | 49,828 | 3,049 | 15,381 |
| Agricultural economics | 2,273 | 47 | 0 | 55 | 90 | 1,016 | 14 | 1,051 |
| Anthropology | 6,494 | 128 | 66 | 114 | 173 | 4,943 | 285 | 785 |
| Economics (except agricultural) | 12,432 | 329 | 68 | 410 | 251 | 5,570 | 520 | 5,284 |
| Geography | 3,618 | 71 | 12 | 74 | 61 | 2,745 | 150 | 505 |
| History and philosophy of science | 370 | 6 | 1 | 8 | 5 | 298 | 8 | 44 |
| Linguistics | 3,533 | 162 | 8 | 81 | 154 | 1,837 | 68 | 1,223 |
| Political science | 30,698 | 2,650 | 92 | 711 | 1,349 | 21,084 | 1,388 | 3,424 |
| Sociology | 7,756 | 573 | 45 | 225 | 291 | 4,789 | 214 | 1,619 |
| Sociology/anthropology | 1,212 | 118 | 5 | 9 | 26 | 837 | 33 | 184 |
| Social sciences, n.e.c. | 10,234 | 993 | 46 | 215 | 640 | 6,709 | 369 | 1,262 |
| Total, health fields | 57,374 | 2,582 | 222 | 1,721 | 2,067 | 44,787 | 1,690 | 4,305 |
| Dentistry | 969 | 23 | 3 | 52 | 25 | 623 | 40 | 203 |
| Neurology | 810 | 9 | 1 | 50 | 19 | 588 | 6 | 137 |
| Nursing | 21,320 | 1,011 | 93 | 449 | 512 | 18,444 | 503 | 308 |
| Pharmaceutical sciences | 2,963 | 116 | 2 | 185 | 71 | 1,372 | 141 | 1,076 |
| Preventive medicine/community health | 8,261 | 491 | 37 | 378 | 676 | 5,293 | 182 | 1,204 |
| Speech pathology/audiology | 8,608 | 367 | 34 | 161 | 284 | 7,079 | 316 | 367 |
| Veterinary sciences | 900 | 41 | 2 | 20 | 11 | 576 | 29 | 221 |
| Clinical medicine, n.e.c. | 1,839 | 50 | 6 | 121 | 46 | 1,249 | 68 | 299 |
| Health related, n.e.c. | 11,704 | 454 | 44 | 325 | 423 | 9,563 | 405 | 490 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 3. Full-time science and engineering graduate students by source and type of major support in all institutions according to highest degree granted: 1990

| Highest degree granted and source of major support | Total | Fellowships | Traineeships | Research assistantships | Teaching assistantships | Other types of support |
|---|---|---|---|---|---|---|
| In all institutions: | | | | | | |
| Total, all sources | 295,836 | 25,642 | 15,204 | 81,038 | 65,058 | 108,894 |
| Federal, total | 59,863 | 6,385 | 9,366 | 38,468 | 618 | 5,026 |
| Dept of Defense | 8,816 | 583 | 124 | 5,312 | 0 | 2,797 |
| Dept of HHS, total | 19,636 | 1,076 | 7,603 | 10,437 | 121 | 399 |
| NIH | 15,030 | 883 | 4,376 | 9,403 | 97 | 271 |
| Other HHS | 4,606 | 193 | 3,227 | 1,034 | 24 | 128 |
| NSF | 12,016 | 2,101 | 54 | 9,697 | 86 | 78 |
| USDA | 2,733 | 110 | 57 | 2,439 | 44 | 83 |
| All other Federal | 16,662 | 2,515 | 1,528 | 10,583 | 367 | 1,669 |
| Institutional support | 123,455 | 13,332 | 5,022 | 30,363 | 63,908 | 10,830 |
| Other outside support, total | 26,472 | 5,925 | 816 | 12,207 | 532 | 6,992 |
| All other U.S. | 19,880 | 3,695 | 578 | 11,479 | 532 | 3,596 |
| Foreign | 6,592 | 2,230 | 238 | 728 | 0 | 3,396 |
| Self-support | 86,046 | 0 | 0 | 0 | 0 | 86,046 |
| Doctorate-granting: | | | | | | |
| Total, all sources | 275,262 | 25,033 | 14,786 | 79,087 | 62,609 | 93,747 |
| Federal, total | 58,516 | 6,247 | 9,090 | 37,984 | 558 | 4,637 |
| Dept of Defense | 8,702 | 577 | 120 | 5,252 | 0 | 2,753 |
| Dept of HHS, total | 19,303 | 1,072 | 7,379 | 10,362 | 118 | 372 |
| NIH | 14,939 | 881 | 4,359 | 9,334 | 94 | 271 |
| Other HHS | 4,364 | 191 | 3,020 | 1,028 | 24 | 101 |
| NSF | 11,949 | 2,093 | 54 | 9,641 | 85 | 76 |
| USDA | 2,661 | 107 | 57 | 2,373 | 44 | 80 |
| All other Federal | 15,901 | 2,398 | 1,480 | 10,356 | 311 | 1,356 |
| Institutional support | 118,349 | 12,958 | 4,900 | 28,963 | 61,546 | 9,982 |
| Other outside support, total | 26,020 | 5,828 | 796 | 12,140 | 505 | 6,751 |
| All other U.S. | 19,568 | 3,631 | 559 | 11,419 | 505 | 3,454 |
| Foreign | 6,452 | 2,197 | 237 | 721 | 0 | 3,297 |
| Self-support | 72,377 | 0 | 0 | 0 | 0 | 72,377 |
| Masters-granting: | | | | | | |
| Total, all sources | 20,574 | 609 | 418 | 1,951 | 2,449 | 15,147 |
| Federal, total | 1,347 | 138 | 276 | 484 | 60 | 389 |
| Dept of Defense | 114 | 6 | 4 | 60 | 0 | 44 |
| Dept of HHS, total | 333 | 4 | 224 | 75 | 3 | 27 |
| NIH | 91 | 2 | 17 | 69 | 3 | 0 |
| Other HHS | 242 | 2 | 207 | 6 | 0 | 27 |
| NSF | 67 | 8 | 0 | 56 | 1 | 2 |
| USDA | 72 | 3 | 0 | 66 | 0 | 3 |
| All other Federal | 761 | 117 | 48 | 227 | 56 | 313 |
| Institutional support | 5,106 | 374 | 122 | 1,400 | 2,362 | 848 |
| Other outside support, total | 452 | 97 | 20 | 67 | 27 | 241 |
| All other U.S. | 312 | 64 | 19 | 60 | 27 | 142 |
| Foreign | 140 | 33 | 1 | 7 | 0 | 99 |
| Self-support | 13,669 | 0 | 0 | 0 | 0 | 13,669 |

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 4. Science and engineering graduate students in all institutions by enrollment status and field: 1975-90

| Year | Total, all surveyed fields | Sciences |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Sciences, total | Physical sciences | Earth, atmospheric, and ocean sciences | Mathematical sciences | Computer sciences | Agricultural sciences | Biological sciences | Psychology | Social sciences |
|  | Total enrollment |  |  |  |  |  |  |  |  |  |
| 1975 ...... | 329,446 | 235,096 | 26,310 | 12,289 | 16,918 | 8,415 | 10,578 | 46,577 | 36,191 | 77,818 |
| 1976 ...... | 334,574 | 239,090 | 26,631 | 13,034 | 17,092 | 8,627 | 11,154 | 47,932 | 37,458 | 77,162 |
| 1977 ...... | 346,838 | 243,432 | 26,855 | 13,658 | 16,069 | 9,108 | 11,520 | 49,556 | 38,617 | 78,049 |
| 1978 1/.... | 345,187 | 239,966 | 26,379 | 13,484 | 15,077 | 9,925 | 11,753 | 48,600 | 38,188 | 76,560 |
| 1979 ...... | 359,789 | 248,416 | 26,700 | 13,854 | 15,063 | 11,690 | 12,069 | 48,503 | 39,777 | 80,760 |
| 1980 ...... | 369,679 | 252,407 | 26,952 | 14,208 | 15,360 | 13,578 | 12,254 | 47,890 | 40,617 | 81,548 |
| 1981 ...... | 377,896 | 253,493 | 27,382 | 14,422 | 15,915 | 16,437 | 12,100 | 46,979 | 40,674 | 79,584 |
| 1982 ...... | 384,872 | 256,126 | 28,199 | 15,174 | 17,199 | 19,812 | 12,314 | 46,310 | 40,082 | 77,036 |
| 1983 ...... | 393,891 | 257,610 | 29,466 | 15,544 | 17,397 | 23,616 | 12,290 | 46,055 | 41,039 | 72,203 |
| 1984 2/.... | 398,011 | 258,383 | 30,064 | 15,612 | 17,478 | 25,810 | 12,062 | 46,171 | 41,074 | 70,112 |
| 1985 2/.... | 407,795 | 263,771 | 30,995 | 15,545 | 17,613 | 29,844 | 11,380 | 46,538 | 41,308 | 70,548 |
| 1986 2/.... | 419,102 | 267,416 | 32,260 | 15,163 | 17,990 | 31,425 | 11,329 | 47,216 | 41,551 | 70,482 |
| 1987 2/.... | 425,150 | 270,988 | 32,738 | 14,522 | 18,573 | 32,137 | 11,004 | 47,452 | 42,888 | 71,674 |
| 1988 ...... | 429,648 | 274,555 | 32,972 | 14,032 | 19,141 | 32,787 | 11,000 | 48,316 | 44,389 | 71,918 |
| 1989 ...... | 439,941 | 281,232 | 33,628 | 13,848 | 19,382 | 32,846 | 11,038 | 49,617 | 46,304 | 74,569 |
| 1990 ...... | 458,943 | 292,270 | 34,337 | 14,159 | 19,884 | 34,507 | 11,183 | 50,921 | 48,659 | 78,620 |
|  | Full-time |  |  |  |  |  |  |  |  |  |
| 1975 ...... | 220,287 | 164,815 | 21,916 | 9,677 | 10,695 | 4,473 | 8,758 | 37,047 | 24,105 | 48,144 |
| 1976 ...... | 223,940 | 168,199 | 22,252 | 10,219 | 10,952 | 4,748 | 9,317 | 38,087 | 25,643 | 46,981 |
| 1977 ...... | 227,698 | 169,516 | 22,505 | 10,556 | 10,365 | 4,604 | 9,567 | 38,603 | 25,703 | 47,613 |
| 1978 1/.... | 225,072 | 165,537 | 22,158 | 10,511 | 9,804 | 4,926 | 9,598 | 38,122 | 24,963 | 45,455 |
| 1979 ...... | 232,938 | 169,466 | 22,535 | 10,724 | 9,668 | 5,853 | 9,794 | 38,218 | 25,859 | 46,815 |
| 1980 ...... | 239,647 | 172,176 | 22,918 | 10,969 | 9,902 | 6,587 | 9,980 | 37,928 | 26,678 | 47,214 |
| 1981 ...... | 243,471 | 172,742 | 23,308 | 11,038 | 10,154 | 7,445 | 10,076 | 37,582 | 26,715 | 46,424 |
| 1982 ...... | 246,046 | 172,537 | 24,040 | 11,436 | 10,823 | 9,171 | 9,891 | 36,989 | 25,812 | 44,375 |
| 1983 ...... | 253,578 | 176,249 | 25,205 | 12,049 | 10,964 | 10,687 | 9,836 | 37,112 | 26,701 | 43,695 |
| 1984 2/.... | 255,430 | 176,654 | 25,852 | 11,819 | 11,319 | 11,587 | 9,750 | 37,480 | 26,108 | 42,739 |
| 1985 2/.... | 259,320 | 179,310 | 26,669 | 11,439 | 11,833 | 14,101 | 9,097 | 37,362 | 25,769 | 43,040 |
| 1986 2/.... | 268,185 | 183,716 | 27,764 | 11,323 | 12,398 | 15,310 | 9,229 | 38,178 | 26,521 | 42,993 |
| 1987 2/.... | 273,090 | 186,485 | 28,414 | 10,543 | 13,049 | 15,572 | 8,983 | 38,789 | 27,497 | 43,638 |
| 1988 ...... | 277,859 | 189,243 | 28,574 | 10,296 | 13,523 | 15,596 | 8,986 | 39,772 | 28,480 | 44,016 |
| 1989 ...... | 285,989 | 194,695 | 29,193 | 10,138 | 13,705 | 16,008 | 8,926 | 40,984 | 30,172 | 45,569 |
| 1990 ...... | 295,836 | 201,074 | 29,573 | 10,295 | 13,870 | 16,872 | 8,961 | 41,685 | 30,992 | 48,826 |
|  | Part-time |  |  |  |  |  |  |  |  |  |
| 1975 ...... | 109,159 | 70,281 | 4,394 | 2,612 | 6,223 | 3,942 | 1,820 | 9,530 | 12,086 | 29,674 |
| 1976 ...... | 110,634 | 70,891 | 4,379 | 2,815 | 6,140 | 3,879 | 1,837 | 9,845 | 11,815 | 30,181 |
| 1977 ...... | 119,140 | 73,916 | 4,350 | 3,102 | 5,704 | 4,504 | 1,953 | 10,953 | 12,914 | 30,436 |
| 1978 1/.... | 120,115 | 74,429 | 4,221 | 2,973 | 5,273 | 4,999 | 2,155 | 10,478 | 12,225 | 31,105 |
| 1979 ...... | 126,851 | 78,950 | 4,165 | 3,130 | 5,395 | 5,837 | 2,275 | 10,285 | 13,918 | 33,945 |
| 1980 ...... | 130,032 | 80,231 | 4,034 | 3,239 | 5,458 | 6,991 | 2,274 | 9,962 | 13,939 | 34,334 |
| 1981 ...... | 134,425 | 80,751 | 4,074 | 3,384 | 5,761 | 8,992 | 2,024 | 9,397 | 13,959 | 33,160 |
| 1982 ...... | 138,826 | 83,589 | 4,159 | 3,738 | 6,376 | 10,641 | 2,423 | 9,321 | 14,270 | 32,661 |
| 1983 ...... | 140,313 | 81,361 | 4,261 | 3,495 | 6,433 | 12,929 | 2,454 | 8,943 | 14,338 | 28,508 |
| 1984 2/.... | 142,581 | 81,729 | 4,212 | 3,793 | 6,159 | 14,223 | 2,312 | 8,691 | 14,966 | 27,373 |
| 1985 2/.... | 148,475 | 84,461 | 4,326 | 4,106 | 5,780 | 15,743 | 2,283 | 9,176 | 15,539 | 27,508 |
| 1986 2/.... | 150,917 | 83,700 | 4,496 | 3,840 | 5,592 | 16,115 | 2,100 | 9,038 | 15,030 | 27,489 |
| 1987 2/.... | 152,060 | 84,503 | 4,324 | 3,979 | 5,524 | 16,565 | 2,021 | 8,663 | 15,391 | 28,036 |
| 1988 ...... | 151,789 | 85,312 | 4,398 | 3,736 | 5,618 | 17,191 | 2,014 | 8,544 | 15,909 | 27,902 |
| 1989 ...... | 153,952 | 86,537 | 4,435 | 3,710 | 5,677 | 16,838 | 2,112 | 8,633 | 16,132 | 29,000 |
| 1990 ...... | 163,107 | 91,196 | 4,764 | 3,864 | 6,014 | 17,635 | 2,222 | 9,236 | 17,667 | 29,794 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 4. Science and engineering graduate students in all institutions by enrollment status and field: 1975-90

| Year | Engineering | | | | | | | | | Health fields |
|---|---|---|---|---|---|---|---|---|---|---|
| | Engineering, total | Aerospace engineering | Chemical engineering | Civil engineering | Electrical engineering | Industrial engineering | Mechanical engineering | Metallurgical & materials engineering | Other engineering | |
| | Total enrollment | | | | | | | | | |
| 1975 ...... | 68,360 | 1,670 | 5,336 | 12,560 | 16,320 | 11,663 | 8,601 | 2,352 | 9,858 | 25,990 |
| 1976 ...... | 66,750 | 1,477 | 5,581 | 11,995 | 15,926 | 10,687 | 8,313 | 2,375 | 10,396 | 28,734 |
| 1977 ...... | 69,113 | 1,518 | 5,580 | 12,683 | 17,406 | 10,438 | 8,722 | 2,559 | 10,207 | 34,293 |
| 1978 1/.... | 68,661 | 1,460 | 5,751 | 12,771 | 17,365 | 9,569 | 8,704 | 2,569 | 10,472 | 36,560 |
| 1979 ...... | 72,242 | 1,481 | 6,029 | 13,197 | 17,789 | 10,714 | 9,251 | 2,756 | 11,025 | 39,131 |
| 1980 ...... | 75,053 | 1,737 | 6,518 | 13,471 | 19,227 | 9,870 | 9,888 | 2,910 | 11,432 | 42,219 |
| 1981 ...... | 80,457 | 1,883 | 7,017 | 14,493 | 20,193 | 10,026 | 10,618 | 3,125 | 13,102 | 43,946 |
| 1982 ...... | 84,581 | 1,941 | 7,775 | 14,510 | 22,017 | 9,870 | 11,467 | 3,124 | 13,877 | 44,165 |
| 1983 ...... | 91,937 | 2,408 | 8,300 | 15,299 | 25,213 | 9,621 | 12,911 | 3,447 | 14,738 | 44,344 |
| 1984 2/.... | 93,644 | 2,445 | 8,117 | 15,569 | 26,306 | 9,820 | 13,855 | 3,657 | 13,875 | 45,984 |
| 1985 2/.... | 96,951 | 2,658 | 7,932 | 15,248 | 28,128 | 11,078 | 14,157 | 3,938 | 13,812 | 47,073 |
| 1986 2/.... | 103,071 | 2,924 | 7,759 | 15,357 | 30,008 | 12,120 | 15,740 | 4,170 | 14,993 | 48,615 |
| 1987 2/.... | 104,644 | 3,121 | 7,929 | 14,924 | 31,339 | 12,690 | 16,304 | 4,309 | 14,028 | 49,518 |
| 1988 ...... | 103,719 | 3,318 | 7,360 | 15,022 | 31,960 | 11,849 | 16,233 | 4,272 | 13,705 | 51,374 |
| 1989 ...... | 104,815 | 3,559 | 7,125 | 15,128 | 33,161 | 11,559 | 16,216 | 4,544 | 13,523 | 53,894 |
| 1990 ...... | 109,299 | 4,006 | 7,404 | 15,891 | 33,887 | 11,816 | 16,879 | 4,822 | 14,594 | 57,374 |
| | Full-time | | | | | | | | | |
| 1975 ...... | 37,813 | 1,245 | 3,743 | 7,363 | 8,278 | 4,152 | 4,931 | 1,787 | 6,314 | 17,659 |
| 1976 ...... | 36,950 | 1,165 | 4,014 | 7,025 | 8,147 | 3,578 | 4,919 | 1,860 | 6,242 | 18,791 |
| 1977 ...... | 37,554 | 1,187 | 4,174 | 7,440 | 8,528 | 3,343 | 4,883 | 1,951 | 6,048 | 20,628 |
| 1978 1/.... | 37,913 | 1,138 | 4,258 | 7,673 | 8,512 | 3,256 | 4,952 | 1,973 | 6,151 | 21,622 |
| 1979 ...... | 40,378 | 1,152 | 4,555 | 7,998 | 9,039 | 3,743 | 5,428 | 2,135 | 6,328 | 23,094 |
| 1980 ...... | 43,088 | 1,327 | 4,863 | 8,324 | 9,963 | 3,772 | 5,841 | 2,254 | 6,744 | 24,383 |
| 1981 ...... | 46,244 | 1,483 | 5,382 | 9,195 | 10,450 | 3,642 | 6,422 | 2,454 | 7,216 | 24,485 |
| 1982 ...... | 50,233 | 1,522 | 6,084 | 9,762 | 11,533 | 3,831 | 7,267 | 2,478 | 7,756 | 23,276 |
| 1983 ...... | 54,321 | 1,840 | 6,489 | 10,185 | 13,203 | 3,334 | 8,330 | 2,704 | 8,236 | 23,008 |
| 1984 2/.... | 55,528 | 1,854 | 6,348 | 10,455 | 13,857 | 3,438 | 8,698 | 2,872 | 8,006 | 23,248 |
| 1985 2/.... | 56,283 | 1,994 | 6,123 | 10,092 | 14,752 | 3,530 | 8,875 | 3,088 | 7,829 | 23,727 |
| 1986 2/.... | 60,708 | 2,154 | 6,166 | 10,352 | 16,322 | 3,886 | 9,801 | 3,347 | 8,680 | 23,761 |
| 1987 2/.... | 62,167 | 2,372 | 6,318 | 9,857 | 17,040 | 4,255 | 10,175 | 3,397 | 8,753 | 24,438 |
| 1988 ...... | 63,400 | 2,533 | 5,958 | 10,157 | 17,653 | 4,399 | 10,438 | 3,421 | 8,841 | 25,216 |
| 1989 ...... | 64,716 | 2,772 | 5,788 | 10,183 | 18,396 | 4,760 | 10,426 | 3,685 | 8,706 | 26,578 |
| 1990 ...... | 66,547 | 3,010 | 5,937 | 10,445 | 18,710 | 4,966 | 10,843 | 3,848 | 8,788 | 28,215 |
| | Part-time | | | | | | | | | |
| 1975 ...... | 30,547 | 425 | 1,593 | 5,197 | 8,042 | 7,511 | 3,670 | 565 | 3,544 | 8,331 |
| 1976 ...... | 29,800 | 312 | 1,567 | 4,970 | 7,779 | 7,109 | 3,394 | 515 | 4,154 | 9,943 |
| 1977 ...... | 31,559 | 331 | 1,406 | 5,243 | 8,878 | 7,095 | 3,839 | 608 | 4,159 | 13,665 |
| 1978 1/.... | 30,748 | 322 | 1,493 | 5,098 | 8,853 | 6,313 | 3,752 | 596 | 4,321 | 14,938 |
| 1979 ...... | 31,864 | 329 | 1,474 | 5,199 | 8,750 | 6,971 | 3,823 | 621 | 4,697 | 16,037 |
| 1980 ...... | 31,965 | 410 | 1,655 | 5,147 | 9,264 | 6,098 | 4,047 | 656 | 4,688 | 17,836 |
| 1981 ...... | 34,213 | 400 | 1,635 | 5,298 | 9,743 | 6,384 | 4,196 | 671 | 5,886 | 19,461 |
| 1982 ...... | 34,348 | 419 | 1,691 | 4,748 | 10,484 | 6,039 | 4,200 | 646 | 6,121 | 20,889 |
| 1983 ...... | 37,616 | 568 | 1,811 | 5,114 | 12,010 | 6,287 | 4,581 | 743 | 6,502 | 21,336 |
| 1984 2/.... | 38,116 | 591 | 1,769 | 5,114 | 12,449 | 6,382 | 5,157 | 785 | 5,869 | 22,736 |
| 1985 2/.... | 40,668 | 664 | 1,809 | 5,156 | 13,376 | 7,548 | 5,282 | 850 | 5,983 | 23,346 |
| 1986 2/.... | 42,363 | 770 | 1,593 | 5,005 | 13,686 | 8,234 | 5,939 | 823 | 6,313 | 24,854 |
| 1987 2/.... | 42,477 | 749 | 1,611 | 5,067 | 14,299 | 8,435 | 6,129 | 912 | 5,275 | 25,080 |
| 1988 ...... | 40,319 | 785 | 1,402 | 4,865 | 14,307 | 7,450 | 5,795 | 851 | 4,864 | 26,158 |
| 1989 ...... | 40,099 | 787 | 1,337 | 4,945 | 14,765 | 6,799 | 5,790 | 859 | 4,817 | 27,316 |
| 1990 ...... | 42,752 | 996 | 1,467 | 5,446 | 15,177 | 6,850 | 6,036 | 974 | 5,806 | 29,159 |

1/ Master's-granting institutions were not surveyed in 1978; totals include estimates based on 1977 and 1979 data.

2/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 5. Science and engineering graduate students in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 384,872 | 393,891 | 398,011 | 407,795 | 419,102 | 425,150 | 429,648 | 439,941 | 458,943 |
| Total, science/engineering fields | 340,707 | 349,547 | 352,027 | 360,722 | 370,487 | 375,632 | 378,274 | 386,047 | 401,569 |
| Engineering, total | 84,581 | 91,937 | 93,644 | 96,951 | 103,071 | 104,644 | 103,719 | 104,815 | 109,299 |
| Aerospace | 1,941 | 2,408 | 2,445 | 2,658 | 2,924 | 3,121 | 3,318 | 3,559 | 4,006 |
| Agricultural | 875 | 969 | 954 | 941 | 1,054 | 1,063 | 1,039 | 1,031 | 939 |
| Biomedical | 1,116 | 1,244 | 1,345 | 1,373 | 1,349 | 1,689 | 1,755 | 1,919 | 2,130 |
| Chemical | 7,189 | 7,563 | 7,373 | 7,150 | 7,012 | 7,111 | 6,618 | 6,460 | 6,734 |
| Civil | 14,510 | 15,299 | 15,569 | 15,248 | 15,357 | 14,924 | 15,022 | 15,128 | 15,891 |
| Electrical | 22,017 | 25,213 | 26,306 | 28,128 | 30,008 | 31,339 | 31,960 | 33,161 | 33,887 |
| Engineering science | 2,130 | 2,261 | 2,153 | 2,098 | 2,362 | 2,359 | 2,408 | 2,077 | 2,547 |
| Industrial | 9,870 | 9,621 | 9,820 | 11,078 | 12,120 | 12,690 | 11,849 | 11,559 | 11,816 |
| Mechanical | 11,467 | 12,911 | 13,855 | 14,157 | 15,740 | 16,304 | 16,233 | 16,216 | 16,879 |
| Metallurgical/materials | 3,124 | 3,447 | 3,657 | 3,938 | 4,170 | 4,309 | 4,272 | 4,544 | 4,822 |
| Mining | 449 | 524 | 502 | 489 | 512 | 513 | 489 | 418 | 437 |
| Nuclear | 1,301 | 1,203 | 1,234 | 1,220 | 1,265 | 1,279 | 1,303 | 1,323 | 1,278 |
| Petroleum | 586 | 737 | 744 | 782 | 747 | 818 | 742 | 665 | 670 |
| Engineering, n.e.c. | 8,006 | 8,537 | 7,687 | 7,691 | 8,251 | 7,125 | 6,711 | 6,755 | 7,263 |
| Sciences, total | 256,126 | 257,610 | 258,383 | 263,771 | 267,416 | 270,988 | 274,555 | 281,232 | 292,270 |
| Physical sciences | 28,199 | 29,466 | 30,064 | 30,995 | 32,260 | 32,738 | 32,972 | 33,628 | 34,337 |
| Astronomy | 632 | 618 | 639 | 671 | 689 | 722 | 731 | 789 | 811 |
| Chemistry | 17,015 | 17,801 | 17,756 | 18,309 | 18,745 | 18,824 | 18,578 | 18,817 | 19,142 |
| Physics | 10,306 | 10,811 | 11,335 | 11,677 | 12,443 | 12,810 | 13,312 | 13,660 | 13,985 |
| Physical sciences, n.e.c. | 246 | 236 | 334 | 338 | 383 | 382 | 351 | 362 | 399 |
| Earth, atmospheric, and ocean sciences | 15,174 | 15,544 | 15,612 | 15,545 | 15,163 | 14,522 | 14,032 | 13,848 | 14,159 |
| Atmospheric sciences | 889 | 896 | 907 | 964 | 961 | 952 | 940 | 912 | 929 |
| Geosciences | 9,621 | 10,321 | 10,370 | 10,294 | 9,819 | 8,998 | 8,495 | 8,082 | 7,742 |
| Oceanography | 2,091 | 2,063 | 2,102 | 2,081 | 2,128 | 2,127 | 2,033 | 2,207 | 2,252 |
| Earth, atmos., and ocean sci., n.e.c. | 2,573 | 2,264 | 2,233 | 2,206 | 2,255 | 2,445 | 2,564 | 2,647 | 3,236 |
| Mathematical sciences | 17,199 | 17,397 | 17,478 | 17,613 | 17,990 | 18,573 | 19,141 | 19,382 | 19,884 |
| Computer sciences | 19,812 | 23,616 | 25,810 | 29,844 | 31,425 | 32,137 | 32,787 | 32,846 | 34,507 |
| Agricultural sciences | 12,314 | 12,290 | 12,062 | 11,380 | 11,329 | 11,004 | 11,000 | 11,038 | 11,183 |
| Biological sciences | 46,310 | 46,055 | 46,171 | 46,538 | 47,216 | 47,452 | 48,316 | 49,617 | 50,921 |
| Anatomy | 1,074 | 1,037 | 1,029 | 993 | 973 | 1,016 | 1,056 | 1,078 | 1,011 |
| Biochemistry | 4,124 | 4,234 | 4,490 | 4,691 | 4,909 | 4,848 | 4,958 | 5,157 | 5,153 |
| Biology | 13,397 | 13,071 | 12,905 | 12,732 | 12,707 | 12,508 | 12,602 | 12,958 | 13,258 |
| Biometry/epidemiology | 1,166 | 1,156 | 1,004 | 1,360 | 1,441 | 1,617 | 1,743 | 1,789 | 1,966 |
| Biophysics | 440 | 450 | 433 | 441 | 547 | 591 | 592 | 655 | 642 |
| Botany | 3,644 | 3,450 | 3,404 | 3,335 | 3,290 | 3,140 | 3,083 | 3,001 | 2,884 |
| Cell biology | 1,143 | 1,182 | 1,256 | 1,427 | 1,716 | 1,964 | 2,078 | 2,234 | 2,592 |
| Ecology | 1,051 | 1,007 | 1,088 | 1,028 | 1,012 | 963 | 1,028 | 1,109 | 1,177 |
| Entomology/parasitology | 1,540 | 1,475 | 1,438 | 1,342 | 1,306 | 1,244 | 1,240 | 1,181 | 1,194 |
| Genetics | 990 | 1,035 | 1,059 | 1,120 | 1,262 | 1,314 | 1,289 | 1,365 | 1,408 |
| Microbiology | 4,130 | 4,262 | 4,326 | 4,447 | 4,374 | 4,457 | 4,774 | 4,817 | 4,874 |
| Nutrition | 4,359 | 4,351 | 4,277 | 4,316 | 4,321 | 4,288 | 4,228 | 4,259 | 4,259 |
| Pathology | 1,460 | 1,462 | 1,468 | 1,355 | 1,398 | 1,442 | 1,400 | 1,428 | 1,424 |
| Pharmacology | 2,084 | 2,140 | 2,122 | 2,181 | 2,159 | 2,154 | 2,210 | 2,353 | 2,438 |
| Physiology | 2,058 | 1,994 | 2,160 | 2,211 | 2,220 | 2,213 | 2,220 | 2,206 | 2,276 |
| Zoology | 2,503 | 2,430 | 2,303 | 2,135 | 2,083 | 2,113 | 2,034 | 2,089 | 2,110 |
| Biosciences, n.e.c. | 1,147 | 1,319 | 1,409 | 1,424 | 1,498 | 1,580 | 1,781 | 1,938 | 2,255 |
| Psychology | 40,082 | 41,039 | 41,074 | 41,308 | 41,551 | 42,888 | 44,389 | 46,304 | 48,659 |
| Social sciences | 77,036 | 72,203 | 70,112 | 70,548 | 70,482 | 71,674 | 71,918 | 74,569 | 78,620 |
| Agricultural economics | 2,267 | 2,295 | 2,279 | 2,268 | 2,248 | 2,203 | 2,259 | 2,276 | 2,273 |
| Anthropology | 5,948 | 5,644 | 5,590 | 5,621 | 5,793 | 5,825 | 5,935 | 6,128 | 6,494 |
| Economics (except agricultural) | 13,735 | 13,162 | 12,599 | 12,502 | 12,186 | 12,135 | 12,152 | 12,289 | 12,432 |
| Geography | 3,166 | 3,060 | 3,035 | 2,936 | 3,055 | 3,223 | 3,208 | 3,511 | 3,618 |
| History and philosophy of science | 256 | 253 | 274 | 272 | 266 | 294 | 288 | 342 | 370 |
| Linguistics | 2,803 | 3,022 | 3,160 | 3,055 | 3,109 | 3,282 | 3,255 | 3,355 | 3,533 |
| Political science | 29,887 | 28,050 | 25,921 | 27,012 | 27,251 | 27,608 | 27,856 | 29,079 | 30,698 |
| Sociology | 7,246 | 6,920 | 6,740 | 6,567 | 6,504 | 6,945 | 7,045 | 7,358 | 7,756 |
| Sociology/anthropology | 1,133 | 1,200 | 1,075 | 1,034 | 1,021 | 982 | 991 | 1,022 | 1,212 |
| Social sciences, n.e.c. | 10,595 | 8,597 | 9,439 | 9,281 | 9,049 | 9,177 | 8,929 | 9,209 | 10,234 |
| Total, health fields | 44,165 | 44,344 | 45,984 | 47,073 | 48,615 | 49,518 | 51,374 | 53,894 | 57,374 |
| Dentistry | 836 | 776 | 850 | 835 | 938 | 1,057 | 1,085 | 1,007 | 969 |
| Neurology | 204 | 261 | 317 | 337 | 383 | 494 | 600 | 706 | 810 |
| Nursing | 16,254 | 16,945 | 17,987 | 17,962 | 18,424 | 18,479 | 18,987 | 19,812 | 21,320 |
| Pharmaceutical sciences | 2,519 | 2,570 | 2,447 | 2,479 | 2,603 | 2,530 | 2,535 | 2,836 | 2,963 |
| Preventive medicine/community health | 6,816 | 6,679 | 6,841 | 7,292 | 7,226 | 7,560 | 7,671 | 7,680 | 8,261 |
| Speech pathology/audiology | 8,592 | 7,865 | 7,777 | 8,016 | 7,959 | 7,492 | 7,738 | 8,177 | 8,608 |
| Veterinary sciences | 471 | 466 | 557 | 637 | 630 | 731 | 752 | 801 | 900 |
| Clinical medicine, n.e.c. | 1,738 | 1,643 | 1,571 | 1,727 | 1,698 | 1,780 | 1,848 | 1,804 | 1,839 |
| Health related, n.e.c. | 6,735 | 7,139 | 7,637 | 7,788 | 8,754 | 9,395 | 10,158 | 11,071 | 11,704 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 6. Male science and engineering graduate students in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 247,879 | 253,038 | 254,554 | 260,312 | 266,826 | 270,014 | 268,292 | 271,590 | 279,492 |
| Total, science/engineering fields | 236,602 | 242,234 | 243,683 | 249,089 | 255,324 | 257,686 | 256,113 | 258,889 | 266,292 |
| Engineering, total | 75,615 | 81,958 | 83,109 | 85,619 | 90,402 | 91,555 | 90,394 | 91,015 | 94,338 |
| Aerospace | 1,831 | 2,283 | 2,311 | 2,490 | 2,722 | 2,895 | 3,086 | 3,314 | 3,714 |
| Agricultural | 818 | 896 | 872 | 863 | 970 | 967 | 953 | 944 | 838 |
| Biomedical | 897 | 976 | 1,054 | 1,082 | 1,203 | 1,292 | 1,316 | 1,450 | 1,587 |
| Chemical | 6,288 | 6,547 | 6,401 | 6,146 | 5,973 | 5,957 | 5,543 | 5,431 | 5,590 |
| Civil | 12,608 | 13,297 | 13,402 | 12,972 | 13,055 | 12,746 | 12,657 | 12,624 | 13,105 |
| Electrical | 20,466 | 23,157 | 24,112 | 25,719 | 27,104 | 28,263 | 28,705 | 29,661 | 30,107 |
| Engineering science | 1,864 | 1,971 | 1,861 | 1,858 | 2,065 | 2,068 | 2,135 | 1,829 | 2,195 |
| Industrial | 8,216 | 8,044 | 8,082 | 9,135 | 9,859 | 10,344 | 9,618 | 9,331 | 9,569 |
| Mechanical | 10,748 | 12,106 | 12,899 | 13,146 | 14,578 | 15,015 | 14,812 | 14,807 | 15,419 |
| Metallurgical/materials | 2,704 | 2,997 | 3,189 | 3,338 | 3,507 | 3,604 | 3,540 | 3,753 | 3,978 |
| Mining | 409 | 477 | 458 | 459 | 476 | 473 | 461 | 372 | 379 |
| Nuclear | 1,215 | 1,119 | 1,146 | 1,113 | 1,142 | 1,151 | 1,176 | 1,182 | 1,123 |
| Petroleum | 544 | 665 | 684 | 716 | 699 | 764 | 693 | 637 | 637 |
| Engineering, n.e.c. | 7,007 | 7,423 | 6,638 | 6,582 | 7,049 | 6,016 | 5,719 | 5,680 | 6,097 |
| Sciences, total | 160,987 | 160,276 | 160,574 | 163,470 | 164,922 | 166,131 | 165,719 | 167,874 | 171,954 |
| Physical sciences | 22,776 | 23,586 | 23,904 | 24,483 | 25,395 | 25,620 | 25,473 | 25,825 | 26,223 |
| Astronomy | 531 | 526 | 541 | 563 | 568 | 602 | 591 | 649 | 646 |
| Chemistry | 12,855 | 13,289 | 13,116 | 13,518 | 13,719 | 13,648 | 13,112 | 13,154 | 13,280 |
| Physics | 9,238 | 9,609 | 10,043 | 10,179 | 10,866 | 11,137 | 11,561 | 11,792 | 12,047 |
| Physical sciences, n.e.c. | 152 | 162 | 204 | 223 | 242 | 233 | 209 | 230 | 250 |
| Earth, atmospheric, and ocean sciences | 11,393 | 11,593 | 11,694 | 11,571 | 11,183 | 10,708 | 10,164 | 9,923 | 9,994 |
| Atmospheric sciences | 764 | 766 | 769 | 807 | 782 | 784 | 777 | 734 | 744 |
| Geosciences | 7,318 | 7,808 | 7,882 | 7,810 | 7,463 | 6,834 | 6,383 | 6,106 | 5,798 |
| Oceanography | 1,514 | 1,497 | 1,501 | 1,471 | 1,461 | 1,493 | 1,388 | 1,482 | 1,500 |
| Earth, atmos., and ocean sci., n.e.c. | 1,797 | 1,522 | 1,542 | 1,483 | 1,477 | 1,597 | 1,616 | 1,601 | 1,952 |
| Mathematical sciences | 12,109 | 12,184 | 12,295 | 12,227 | 12,501 | 12,944 | 13,348 | 13,359 | 13,646 |
| Computer sciences | 14,366 | 16,968 | 18,905 | 22,387 | 23,677 | 24,233 | 24,564 | 24,880 | 26,316 |
| Agricultural sciences | 9,314 | 9,183 | 8,963 | 8,422 | 8,384 | 8,061 | 7,927 | 7,924 | 7,865 |
| Biological sciences | 27,021 | 26,572 | 26,510 | 26,482 | 26,581 | 26,715 | 26,768 | 27,089 | 27,502 |
| Anatomy | 669 | 632 | 605 | 569 | 560 | 578 | 598 | 598 | 554 |
| Biochemistry | 2,630 | 2,658 | 2,811 | 2,943 | 3,014 | 2,946 | 2,950 | 3,108 | 3,029 |
| Biology | 7,873 | 7,534 | 7,400 | 7,237 | 7,166 | 7,196 | 7,093 | 7,155 | 7,248 |
| Biometry/epidemiology | 561 | 547 | 472 | 640 | 667 | 762 | 786 | 758 | 904 |
| Biophysics | 330 | 338 | 326 | 331 | 410 | 450 | 443 | 493 | 478 |
| Botany | 2,329 | 2,201 | 2,165 | 2,095 | 2,119 | 1,944 | 1,915 | 1,857 | 1,752 |
| Cell biology | 726 | 774 | 789 | 911 | 1,044 | 1,199 | 1,233 | 1,290 | 1,460 |
| Ecology | 684 | 666 | 741 | 661 | 630 | 588 | 622 | 661 | 688 |
| Entomology/parasitology | 1,158 | 1,090 | 1,066 | 992 | 948 | 906 | 881 | 817 | 832 |
| Genetics | 461 | 512 | 547 | 597 | 665 | 673 | 660 | 675 | 681 |
| Microbiology | 2,318 | 2,385 | 2,408 | 2,490 | 2,429 | 2,459 | 2,617 | 2,578 | 2,554 |
| Nutrition | 1,368 | 1,326 | 1,319 | 1,349 | 1,307 | 1,341 | 1,232 | 1,252 | 1,282 |
| Pathology | 872 | 883 | 872 | 787 | 825 | 836 | 826 | 829 | 814 |
| Pharmacology | 1,356 | 1,375 | 1,324 | 1,345 | 1,315 | 1,275 | 1,328 | 1,348 | 1,378 |
| Physiology | 1,367 | 1,297 | 1,388 | 1,375 | 1,366 | 1,378 | 1,357 | 1,313 | 1,327 |
| Zoology | 1,651 | 1,609 | 1,483 | 1,372 | 1,307 | 1,316 | 1,246 | 1,296 | 1,274 |
| Biosciences, n.e.c. | 668 | 745 | 794 | 788 | 809 | 868 | 981 | 1,061 | 1,247 |
| Psychology | 16,977 | 16,687 | 16,216 | 15,778 | 15,459 | 15,744 | 15,643 | 15,906 | 15,963 |
| Social sciences | 47,031 | 43,503 | 42,087 | 42,120 | 41,742 | 42,106 | 41,832 | 42,968 | 44,445 |
| Agricultural economics | 1,804 | 1,807 | 1,791 | 1,761 | 1,747 | 1,696 | 1,713 | 1,694 | 1,674 |
| Anthropology | 2,677 | 2,438 | 2,439 | 2,507 | 2,457 | 2,479 | 2,497 | 2,548 | 2,680 |
| Economics (except agricultural) | 10,237 | 9,939 | 9,544 | 9,416 | 9,144 | 9,071 | 9,007 | 8,983 | 9,013 |
| Geography | 2,195 | 2,051 | 2,050 | 1,988 | 2,071 | 2,130 | 2,153 | 2,317 | 2,377 |
| History and philosophy of science | 167 | 161 | 187 | 180 | 169 | 198 | 184 | 217 | 236 |
| Linguistics | 1,180 | 1,217 | 1,259 | 1,198 | 1,252 | 1,305 | 1,297 | 1,345 | 1,422 |
| Political science | 18,616 | 17,277 | 16,161 | 16,492 | 16,511 | 16,672 | 16,444 | 16,995 | 17,518 |
| Sociology | 3,376 | 3,255 | 3,120 | 3,085 | 2,965 | 3,135 | 3,241 | 3,392 | 3,484 |
| Sociology/anthropology | 553 | 586 | 525 | 496 | 482 | 472 | 443 | 454 | 506 |
| Social sciences, n.e.c. | 6,226 | 4,772 | 5,011 | 4,997 | 4,944 | 4,948 | 4,853 | 5,023 | 5,535 |
| Total, health fields | 11,277 | 10,806 | 10,871 | 11,223 | 11,502 | 12,328 | 12,179 | 12,701 | 13,200 |
| Dentistry | 676 | 607 | 664 | 648 | 731 | 776 | 791 | 717 | 684 |
| Neurology | 140 | 189 | 208 | 208 | 237 | 308 | 357 | 422 | 454 |
| Nursing | 717 | 747 | 786 | 795 | 815 | 1,098 | 909 | 1,071 | 1,054 |
| Pharmaceutical sciences | 1,751 | 1,729 | 1,588 | 1,611 | 1,663 | 1,545 | 1,503 | 1,674 | 1,789 |
| Preventive medicine/community health | 2,986 | 2,821 | 2,793 | 2,973 | 3,049 | 3,384 | 3,181 | 2,908 | 3,214 |
| Speech pathology/audiology | 1,191 | 1,010 | 1,024 | 1,071 | 925 | 737 | 833 | 805 | 801 |
| Veterinary sciences | 297 | 289 | 346 | 401 | 394 | 453 | 452 | 470 | 512 |
| Clinical medicine, n.e.c. | 949 | 844 | 767 | 790 | 798 | 854 | 883 | 895 | 959 |
| Health related, n.e.c. | 2,570 | 2,568 | 2,695 | 2,726 | 2,890 | 3,163 | 3,270 | 3,739 | 3,733 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 7. Female science and engineering graduate students in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 136,993 | 140,853 | 143,457 | 147,483 | 152,276 | 155,136 | 161,356 | 168,351 | 179,451 |
| Total, science/engineering fields | 104,105 | 107,313 | 108,344 | 111,633 | 115,163 | 117,946 | 122,161 | 127,158 | 135,277 |
| Engineering, total | 8,966 | 9,979 | 10,535 | 11,332 | 12,669 | 13,089 | 13,325 | 13,800 | 14,961 |
| Aerospace | 110 | 125 | 134 | 168 | 202 | 226 | 232 | 245 | 292 |
| Agricultural | 57 | 73 | 82 | 78 | 84 | 96 | 86 | 87 | 101 |
| Biomedical | 219 | 270 | 291 | 291 | 346 | 397 | 439 | 469 | 543 |
| Chemical | 901 | 1,016 | 972 | 1,004 | 1,039 | 1,154 | 1,075 | 1,029 | 1,144 |
| Civil | 1,902 | 2,002 | 2,167 | 2,276 | 2,302 | 2,178 | 2,365 | 2,504 | 2,786 |
| Electrical | 1,551 | 2,056 | 2,194 | 2,409 | 2,904 | 3,076 | 3,255 | 3,500 | 3,780 |
| Engineering science | 266 | 290 | 292 | 240 | 297 | 291 | 273 | 248 | 352 |
| Industrial | 1,654 | 1,577 | 1,738 | 1,943 | 2,261 | 2,346 | 2,231 | 2,228 | 2,247 |
| Mechanical | 719 | 805 | 956 | 1,011 | 1,162 | 1,289 | 1,421 | 1,409 | 1,460 |
| Metallurgical/materials | 420 | 448 | 468 | 600 | 663 | 705 | 732 | 791 | 844 |
| Mining | 40 | 47 | 44 | 30 | 36 | 40 | 48 | 46 | 58 |
| Nuclear | 86 | 86 | 88 | 107 | 123 | 128 | 127 | 141 | 155 |
| Petroleum | 42 | 72 | 60 | 66 | 48 | 54 | 49 | 28 | 33 |
| Engineering, n.e.c. | 999 | 1,116 | 1,049 | 1,109 | 1,202 | 1,109 | 992 | 1,075 | 1,166 |
| Sciences, total | 95,139 | 97,334 | 97,809 | 100,301 | 102,494 | 104,857 | 108,836 | 113,358 | 120,316 |
| Physical sciences | 5,423 | 5,880 | 6,160 | 6,512 | 6,865 | 7,118 | 7,499 | 7,803 | 8,114 |
| Astronomy | 101 | 92 | 98 | 108 | 121 | 120 | 140 | 140 | 165 |
| Chemistry | 4,160 | 4,512 | 4,640 | 4,791 | 5,026 | 5,176 | 5,466 | 5,663 | 5,862 |
| Physics | 1,068 | 1,202 | 1,292 | 1,498 | 1,577 | 1,673 | 1,751 | 1,868 | 1,938 |
| Physical sciences, n.e.c. | 94 | 74 | 130 | 115 | 141 | 149 | 142 | 132 | 149 |
| Earth, atmospheric, and ocean sciences | 3,781 | 3,951 | 3,918 | 3,974 | 3,980 | 3,814 | 3,868 | 3,925 | 4,165 |
| Atmospheric sciences | 125 | 130 | 138 | 157 | 179 | 168 | 163 | 178 | 185 |
| Geosciences | 2,303 | 2,513 | 2,488 | 2,484 | 2,356 | 2,164 | 2,112 | 1,976 | 1,944 |
| Oceanography | 577 | 566 | 601 | 610 | 667 | 634 | 645 | 725 | 752 |
| Earth, atmos., and ocean sci., n.e.c. | 776 | 742 | 691 | 723 | 778 | 848 | 948 | 1,046 | 1,284 |
| Mathematical sciences | 5,090 | 5,213 | 5,183 | 5,386 | 5,489 | 5,629 | 5,793 | 6,023 | 6,238 |
| Computer sciences | 5,446 | 6,648 | 6,905 | 7,457 | 7,748 | 7,904 | 8,223 | 7,966 | 8,191 |
| Agricultural sciences | 3,000 | 3,107 | 3,099 | 2,958 | 2,945 | 2,943 | 3,073 | 3,114 | 3,318 |
| Biological sciences | 19,289 | 19,483 | 19,661 | 20,056 | 20,635 | 20,737 | 21,548 | 22,528 | 23,419 |
| Anatomy | 405 | 405 | 426 | 424 | 413 | 438 | 458 | 480 | 457 |
| Biochemistry | 1,494 | 1,576 | 1,679 | 1,748 | 1,895 | 1,902 | 2,008 | 2,049 | 2,124 |
| Biology | 5,524 | 5,537 | 5,505 | 5,495 | 5,541 | 5,312 | 5,509 | 5,803 | 6,010 |
| Biometry/epidemiology | 605 | 609 | 532 | 720 | 774 | 855 | 957 | 1,031 | 1,062 |
| Biophysics | 110 | 112 | 107 | 110 | 137 | 141 | 149 | 162 | 164 |
| Botany | 1,315 | 1,249 | 1,239 | 1,240 | 1,171 | 1,196 | 1,168 | 1,144 | 1,132 |
| Cell biology | 417 | 408 | 467 | 518 | 672 | 765 | 845 | 944 | 1,132 |
| Ecology | 367 | 361 | 347 | 367 | 382 | 375 | 406 | 448 | 489 |
| Entomology/parasitology | 382 | 385 | 372 | 350 | 358 | 338 | 359 | 364 | 362 |
| Genetics | 529 | 523 | 512 | 523 | 597 | 641 | 629 | 690 | 727 |
| Microbiology | 1,812 | 1,877 | 1,918 | 1,957 | 1,945 | 1,998 | 2,157 | 2,239 | 2,320 |
| Nutrition | 2,991 | 3,025 | 2,958 | 2,965 | 3,014 | 2,947 | 2,996 | 3,007 | 2,977 |
| Pathology | 588 | 579 | 596 | 568 | 573 | 606 | 574 | 599 | 610 |
| Pharmacology | 728 | 765 | 798 | 836 | 844 | 879 | 882 | 1,005 | 1,060 |
| Physiology | 691 | 697 | 772 | 836 | 854 | 835 | 863 | 893 | 949 |
| Zoology | 852 | 821 | 820 | 763 | 776 | 797 | 788 | 793 | 836 |
| Biosciences, n.e.c. | 479 | 574 | 615 | 636 | 689 | 712 | 800 | 877 | 1,008 |
| Psychology | 23,105 | 24,352 | 24,858 | 25,530 | 26,092 | 27,144 | 28,746 | 30,398 | 32,696 |
| Social sciences | 30,005 | 28,700 | 28,025 | 28,428 | 28,740 | 29,568 | 30,086 | 31,601 | 34,175 |
| Agricultural economics | 463 | 488 | 488 | 507 | 501 | 507 | 546 | 582 | 599 |
| Anthropology | 3,271 | 3,206 | 3,151 | 3,114 | 3,338 | 3,346 | 3,438 | 3,580 | 3,816 |
| Economics (except agricultural) | 3,498 | 3,223 | 3,055 | 3,086 | 3,040 | 3,066 | 3,145 | 3,306 | 3,419 |
| Geography | 971 | 1,009 | 985 | 948 | 984 | 1,093 | 1,055 | 1,196 | 1,241 |
| History and philosophy of science | 89 | 92 | 87 | 92 | 97 | 98 | 104 | 125 | 134 |
| Linguistics | 1,623 | 1,805 | 1,901 | 1,857 | 1,857 | 1,977 | 1,958 | 2,010 | 2,111 |
| Political science | 11,271 | 10,773 | 9,760 | 10,520 | 10,740 | 10,936 | 11,412 | 12,084 | 13,180 |
| Sociology | 3,870 | 3,665 | 3,620 | 3,482 | 3,539 | 3,810 | 3,804 | 3,966 | 4,272 |
| Sociology/anthropology | 580 | 616 | 550 | 538 | 539 | 510 | 548 | 548 | 704 |
| Social sciences, n.e.c. | 4,369 | 3,825 | 4,428 | 4,284 | 4,105 | 4,229 | 4,076 | 4,186 | 4,699 |
| Total, health fields | 32,888 | 33,540 | 35,113 | 35,850 | 37,113 | 37,190 | 39,195 | 41,193 | 44,174 |
| Dentistry | 160 | 169 | 186 | 187 | 207 | 281 | 294 | 290 | 285 |
| Neurology | 64 | 72 | 109 | 129 | 146 | 186 | 243 | 284 | 356 |
| Nursing | 15,537 | 16,198 | 17,201 | 17,167 | 17,609 | 17,381 | 18,078 | 18,741 | 20,266 |
| Pharmaceutical sciences | 768 | 841 | 859 | 868 | 940 | 985 | 1,032 | 1,162 | 1,176 |
| Preventive medicine/community health | 3,830 | 3,858 | 4,048 | 4,319 | 4,177 | 4,176 | 4,490 | 4,772 | 5,047 |
| Speech pathology/audiology | 7,401 | 6,855 | 6,753 | 6,945 | 7,034 | 6,755 | 6,905 | 7,372 | 7,807 |
| Veterinary sciences | 174 | 177 | 211 | 236 | 236 | 278 | 300 | 331 | 388 |
| Clinical medicine, n.e.c. | 799 | 799 | 804 | 937 | 900 | 916 | 965 | 909 | 880 |
| Health related, n.e.c. | 4,165 | 4,571 | 4,942 | 5,062 | 5,864 | 6,232 | 6,888 | 7,332 | 7,971 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 8. Science and engineering graduate students in all institutions by enrollment status, citizenship, and racial/ethnic background: 1982-90

| Enrollment status, citizenship, and racial/ethnic background | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total enrollment | 384,872 | 393,891 | 398,011 | 407,795 | 419,102 | 425,150 | 429,648 | 439,941 | 458,943 |
| Total U.S. citizens | NA | 320,275 | 322,612 | 327,652 | 331,546 | 332,744 | 331,938 | 337,653 | 352,179 |
| Black, non-Hispanic | 12,079 | 12,973 | 12,764 | 12,602 | 12,598 | 12,549 | 13,533 | 14,163 | 15,473 |
| American Indian/Alaskan Native | 1,080 | 1,106 | 986 | 879 | 903 | 954 | 1,114 | 1,073 | 1,270 |
| Asian/Pacific Islander | 9,118 | 10,348 | 11,173 | 13,034 | 13,951 | 15,770 | 16,561 | 17,235 | 19,195 |
| Hispanic | 8,695 | 10,369 | 10,106 | 10,203 | 10,249 | 10,575 | 11,047 | 11,386 | 12,569 |
| White, non-Hispanic | 250,874 | 261,352 | 260,748 | 261,429 | 266,539 | 268,467 | 270,439 | 273,593 | 285,997 |
| Other or unknown | NA | 24,127 | 26,835 | 29,505 | 27,306 | 24,429 | 19,244 | 20,203 | 17,675 |
| Non-U.S. citizens | NA | 73,616 | 75,399 | 80,143 | 87,556 | 92,406 | 97,710 | 102,288 | 106,764 |
| Full-time enrollment | 246,046 | 253,578 | 255,430 | 259,320 | 268,185 | 273,090 | 277,859 | 285,989 | 295,836 |
| Total U.S. citizens | 188,409 | 191,391 | 191,703 | 190,873 | 192,821 | 194,049 | 193,979 | 198,912 | 205,026 |
| Black, non-Hispanic | 6,408 | 6,661 | 6,618 | 6,496 | 6,491 | 6,500 | 7,093 | 7,703 | 8,249 |
| American Indian/Alaskan Native | 639 | 694 | 634 | 560 | 575 | 616 | 682 | 669 | 768 |
| Asian/Pacific Islander | 5,487 | 6,235 | 6,958 | 7,848 | 8,649 | 9,847 | 10,294 | 10,782 | 12,106 |
| Hispanic | 5,035 | 5,968 | 5,939 | 6,165 | 6,282 | 6,274 | 6,628 | 7,073 | 7,833 |
| White, non-Hispanic | 152,315 | 160,389 | 159,527 | 156,283 | 159,663 | 159,770 | 160,513 | 163,431 | 168,373 |
| Other or unknown | 18,525 | 11,444 | 12,027 | 13,521 | 11,161 | 11,042 | 8,769 | 9,254 | 7,697 |
| Non-U.S. citizens | 57,637 | 62,187 | 63,727 | 68,447 | 75,364 | 79,041 | 83,880 | 87,077 | 90,810 |
| Part-time enrollment | 138,826 | 140,313 | 142,581 | 148,475 | 150,917 | 152,060 | 151,789 | 153,952 | 163,107 |
| Total U.S. citizens | NA | 128,884 | 130,909 | 136,779 | 138,725 | 138,695 | 137,959 | 138,741 | 147,153 |
| Black, non-Hispanic | 5,671 | 6,312 | 6,146 | 6,106 | 6,107 | 6,049 | 6,440 | 6,460 | 7,224 |
| American Indian/Alaskan Native | 441 | 412 | 352 | 319 | 328 | 338 | 432 | 404 | 502 |
| Asian/Pacific Islander | 3,631 | 4,113 | 4,215 | 5,186 | 5,302 | 5,923 | 6,267 | 6,453 | 7,089 |
| Hispanic | 3,660 | 4,401 | 4,167 | 4,038 | 3,967 | 4,301 | 4,419 | 4,313 | 4,736 |
| White, non-Hispanic | 98,559 | 100,963 | 101,221 | 105,146 | 106,876 | 108,697 | 109,926 | 110,162 | 117,624 |
| Other or unknown | NA | 12,683 | 14,808 | 15,984 | 16,145 | 13,387 | 10,475 | 10,949 | 9,978 |
| Non-U.S. citizens | NA | 11,429 | 11,672 | 11,696 | 12,192 | 13,365 | 13,830 | 15,211 | 15,954 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: NA = Not available

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 9. Full-time science and engineering graduate students in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 246,046 | 253,578 | 255,430 | 259,320 | 268,185 | 273,090 | 277,859 | 285,989 | 295,836 |
| Total, science/engineering fields | 222,770 | 230,570 | 232,182 | 235,593 | 244,424 | 248,652 | 252,643 | 259,411 | 267,621 |
| Engineering, total | 50,233 | 54,321 | 55,528 | 56,283 | 60,708 | 62,167 | 63,400 | 64,716 | 66,547 |
| Aerospace | 1,522 | 1,840 | 1,854 | 1,994 | 2,154 | 2,372 | 2,533 | 2,772 | 3,010 |
| Agricultural | 739 | 766 | 773 | 767 | 881 | 924 | 879 | 851 | 793 |
| Biomedical | 931 | 1,031 | 1,121 | 1,129 | 1,294 | 1,392 | 1,455 | 1,611 | 1,798 |
| Chemical | 5,608 | 5,869 | 5,734 | 5,546 | 5,594 | 5,674 | 5,359 | 5,282 | 5,453 |
| Civil | 9,762 | 10,185 | 10,455 | 10,092 | 10,352 | 9,857 | 10,157 | 10,183 | 10,445 |
| Electrical | 11,533 | 13,203 | 13,857 | 14,752 | 16,322 | 17,040 | 17,653 | 18,396 | 18,710 |
| Engineering science | 1,277 | 1,356 | 1,272 | 1,264 | 1,445 | 1,386 | 1,434 | 1,259 | 1,332 |
| Industrial | 3,831 | 3,334 | 3,438 | 3,530 | 3,886 | 4,255 | 4,399 | 4,760 | 4,966 |
| Mechanical | 7,267 | 8,330 | 8,698 | 8,875 | 9,801 | 10,175 | 10,438 | 10,426 | 10,843 |
| Metallurgical/materials | 2,478 | 2,704 | 2,872 | 3,088 | 3,347 | 3,397 | 3,421 | 3,685 | 3,848 |
| Mining | 373 | 428 | 424 | 391 | 442 | 435 | 415 | 338 | 334 |
| Nuclear | 1,042 | 1,052 | 1,018 | 1,030 | 1,059 | 1,044 | 1,105 | 1,112 | 1,080 |
| Petroleum | 476 | 620 | 614 | 577 | 572 | 644 | 599 | 506 | 484 |
| Engineering, n.e.c. | 3,394 | 3,603 | 3,398 | 3,248 | 3,559 | 3,572 | 3,553 | 3,535 | 3,451 |
| Sciences, total | 172,537 | 176,249 | 176,654 | 179,310 | 183,716 | 186,485 | 189,243 | 194,695 | 201,074 |
| Physical sciences | 24,040 | 25,205 | 25,852 | 26,669 | 27,764 | 28,414 | 28,574 | 29,193 | 29,573 |
| Astronomy | 590 | 585 | 596 | 635 | 654 | 681 | 705 | 762 | 790 |
| Chemistry | 14,287 | 15,023 | 15,123 | 15,580 | 15,997 | 16,235 | 16,088 | 16,257 | 16,390 |
| Physics | 9,072 | 9,495 | 9,964 | 10,287 | 10,957 | 11,304 | 11,638 | 12,040 | 12,222 |
| Physical sciences, n.e.c. | 91 | 102 | 169 | 167 | 156 | 194 | 143 | 134 | 171 |
| Earth, atmospheric, and ocean sciences | 11,436 | 12,049 | 11,819 | 11,439 | 11,323 | 10,543 | 10,296 | 10,138 | 10,295 |
| Atmospheric sciences | 779 | 785 | 776 | 872 | 855 | 824 | 829 | 810 | 828 |
| Geosciences | 7,521 | 8,203 | 8,093 | 7,703 | 7,384 | 6,666 | 6,314 | 5,986 | 5,808 |
| Oceanography | 1,593 | 1,612 | 1,599 | 1,562 | 1,694 | 1,651 | 1,629 | 1,799 | 1,853 |
| Earth, atmos., and ocean sci., n.e.c. | 1,543 | 1,449 | 1,351 | 1,302 | 1,390 | 1,402 | 1,524 | 1,543 | 1,806 |
| Mathematical sciences | 10,823 | 10,964 | 11,319 | 11,833 | 12,398 | 13,049 | 13,523 | 13,705 | 13,870 |
| Computer sciences | 9,171 | 10,687 | 11,587 | 14,101 | 15,310 | 15,572 | 15,596 | 16,008 | 16,872 |
| Agricultural sciences | 9,891 | 9,836 | 9,750 | 9,097 | 9,229 | 8,983 | 8,986 | 8,926 | 8,961 |
| Biological sciences | 36,989 | 37,112 | 37,480 | 37,362 | 38,178 | 38,789 | 39,772 | 40,984 | 41,685 |
| Anatomy | 937 | 921 | 936 | 891 | 893 | 929 | 973 | 997 | 922 |
| Biochemistry | 3,850 | 4,007 | 4,263 | 4,488 | 4,664 | 4,639 | 4,768 | 4,885 | 4,936 |
| Biology | 9,044 | 9,010 | 8,971 | 8,531 | 8,577 | 8,685 | 8,883 | 9,333 | 9,340 |
| Biometry/epidemiology | 919 | 877 | 751 | 996 | 1,055 | 1,197 | 1,244 | 1,248 | 1,264 |
| Biophysics | 423 | 437 | 419 | 381 | 449 | 468 | 544 | 610 | 605 |
| Botany | 3,169 | 3,043 | 2,993 | 2,836 | 2,883 | 2,712 | 2,685 | 2,588 | 2,471 |
| Cell biology | 1,110 | 1,138 | 1,209 | 1,406 | 1,655 | 1,886 | 2,023 | 2,177 | 2,515 |
| Ecology | 910 | 842 | 877 | 876 | 857 | 795 | 836 | 879 | 890 |
| Entomology/parasitology | 1,340 | 1,305 | 1,264 | 1,138 | 1,107 | 1,063 | 1,061 | 1,009 | 1,015 |
| Genetics | 924 | 964 | 986 | 1,057 | 1,171 | 1,208 | 1,187 | 1,283 | 1,317 |
| Microbiology | 3,517 | 3,706 | 3,826 | 3,879 | 3,871 | 4,019 | 4,309 | 4,319 | 4,365 |
| Nutrition | 3,120 | 2,988 | 3,018 | 3,040 | 3,055 | 3,014 | 2,876 | 2,874 | 2,920 |
| Pathology | 1,021 | 1,068 | 1,083 | 1,036 | 1,070 | 1,135 | 1,126 | 1,160 | 1,144 |
| Pharmacology | 1,940 | 2,004 | 1,998 | 2,064 | 2,036 | 2,004 | 2,070 | 2,221 | 2,294 |
| Physiology | 1,805 | 1,766 | 1,969 | 1,986 | 2,005 | 1,996 | 2,008 | 2,057 | 2,116 |
| Zoology | 2,136 | 2,052 | 1,863 | 1,718 | 1,720 | 1,787 | 1,719 | 1,776 | 1,683 |
| Biosciences, n.e.c. | 824 | 984 | 1,054 | 1,039 | 1,110 | 1,252 | 1,460 | 1,568 | 1,888 |
| Psychology | 25,812 | 26,701 | 26,108 | 25,769 | 26,521 | 27,497 | 28,480 | 30,172 | 30,992 |
| Social sciences | 44,375 | 43,695 | 42,739 | 43,040 | 42,993 | 43,638 | 44,016 | 45,569 | 48,826 |
| Agricultural economics | 1,978 | 2,047 | 2,027 | 1,990 | 1,964 | 1,857 | 1,909 | 1,912 | 1,961 |
| Anthropology | 4,105 | 3,940 | 3,968 | 3,906 | 4,051 | 4,098 | 4,266 | 4,411 | 4,761 |
| Economics (except agricultural) | 9,479 | 9,215 | 8,824 | 8,975 | 9,003 | 9,029 | 9,072 | 9,147 | 9,366 |
| Geography | 2,139 | 2,202 | 2,175 | 2,124 | 2,108 | 2,290 | 2,215 | 2,358 | 2,429 |
| History and philosophy of science | 223 | 229 | 243 | 227 | 237 | 267 | 266 | 303 | 340 |
| Linguistics | 2,157 | 2,375 | 2,319 | 2,337 | 2,358 | 2,449 | 2,520 | 2,468 | 2,506 |
| Political science | 13,693 | 13,443 | 12,798 | 13,171 | 13,410 | 13,007 | 13,372 | 14,064 | 15,476 |
| Sociology | 4,875 | 4,794 | 4,745 | 4,644 | 4,595 | 5,026 | 5,082 | 5,269 | 5,679 |
| Sociology/anthropology | 657 | 671 | 606 | 565 | 584 | 560 | 566 | 633 | 782 |
| Social sciences, n.e.c. | 5,069 | 4,779 | 5,034 | 5,101 | 4,683 | 5,055 | 4,748 | 5,004 | 5,490 |
| Total, health fields | 23,276 | 23,008 | 23,248 | 23,727 | 23,761 | 24,438 | 25,216 | 26,578 | 28,215 |
| Dentistry | 727 | 701 | 768 | 745 | 825 | 909 | 930 | 859 | 840 |
| Neurology | 202 | 258 | 313 | 335 | 373 | 475 | 590 | 685 | 788 |
| Nursing | 6,612 | 6,204 | 6,113 | 6,045 | 5,878 | 5,924 | 6,024 | 5,987 | 6,126 |
| Pharmaceutical sciences | 1,703 | 1,697 | 1,699 | 1,718 | 1,763 | 1,747 | 1,829 | 2,036 | 2,137 |
| Preventive medicine/community health | 4,056 | 3,961 | 3,955 | 4,137 | 4,079 | 4,162 | 4,217 | 4,206 | 4,500 |
| Speech pathology/audiology | 5,353 | 5,280 | 5,292 | 5,476 | 5,395 | 5,089 | 5,315 | 5,722 | 5,840 |
| Veterinary sciences | 378 | 363 | 425 | 515 | 506 | 592 | 606 | 668 | 709 |
| Clinical medicine, n.e.c. | 1,076 | 1,089 | 1,039 | 1,160 | 1,147 | 1,210 | 1,270 | 1,366 | 1,431 |
| Health related, n.e.c. | 3,169 | 3,455 | 3,644 | 3,596 | 3,795 | 4,330 | 4,435 | 5,049 | 5,844 |

1/ Includes estimated data for master's-granting institutions, were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 10. Full-time science and engineering graduate students in all institutions by field and source of major support: 1982-90

Page 1 of 4

| Field and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | | | | | | | | | |
| Total, all sources | 246,046 | 253,578 | 255,430 | 259,320 | 268,185 | 273,090 | 277,859 | 285,989 | 295,836 |
| Federal, total | 47,583 | 47,898 | 47,912 | 49,220 | 51,526 | 53,708 | 55,684 | 57,899 | 59,863 |
| Dept of Defense | 5,945 | 7,011 | 7,151 | 7,332 | 7,965 | 8,801 | 9,520 | 9,200 | 8,816 |
| Dept of HHS, total | 15,862 | 15,020 | 15,160 | 15,913 | 16,430 | 17,272 | 18,049 | 18,839 | 19,636 |
| NIH | 10,844 | 10,867 | 11,012 | 11,142 | 11,898 | 12,966 | 13,792 | 14,493 | 15,030 |
| Other HHS | 5,018 | 4,153 | 4,148 | 4,771 | 4,532 | 4,306 | 4,257 | 4,346 | 4,606 |
| NSF | 9,287 | 9,524 | 9,853 | 10,183 | 10,834 | 11,247 | 11,633 | 11,901 | 12,016 |
| USDA | NA | NA | NA | 2,181 | 2,347 | 2,696 | 2,607 | 2,745 | 2,733 |
| All other Federal | 16,489 | 16,343 | 15,748 | 13,611 | 13,968 | 13,692 | 13,875 | 15,214 | 16,662 |
| Institutional support | 95,558 | 98,544 | 102,562 | 104,623 | 109,742 | 112,744 | 115,457 | 119,853 | 123,455 |
| Other outside support, total | 24,256 | 24,951 | 24,910 | 26,678 | 26,848 | 25,591 | 25,857 | 26,011 | 26,472 |
| All other U.S. | 15,183 | 15,960 | 16,724 | 18,871 | 19,144 | 18,424 | 18,907 | 19,305 | 19,880 |
| Foreign | 9,073 | 8,991 | 8,186 | 7,807 | 7,704 | 7,167 | 6,950 | 6,706 | 6,592 |
| Self-support | 78,649 | 82,185 | 80,046 | 78,799 | 80,071 | 81,047 | 80,861 | 82,226 | 86,046 |
| Sciences, total | | | | | | | | | |
| Total, all sources | 172,537 | 176,249 | 176,654 | 179,310 | 183,716 | 186,485 | 189,243 | 194,695 | 201,076 |
| Federal, total | 30,044 | 30,153 | 30,428 | 31,676 | 33,008 | 34,082 | 35,259 | 36,858 | 37,968 |
| Dept of Defense | 2,294 | 2,737 | 3,065 | 3,278 | 3,598 | 3,978 | 4,306 | 3,952 | 3,741 |
| Dept of HHS, total | 10,490 | 10,212 | 10,375 | 10,723 | 11,340 | 12,019 | 12,748 | 13,443 | 13,870 |
| NIH | 9,180 | 9,196 | 9,506 | 9,628 | 10,321 | 10,976 | 11,822 | 12,349 | 12,742 |
| Other HHS | 1,310 | 1,016 | 869 | 1,095 | 1,019 | 1,043 | 926 | 1,094 | 1,128 |
| NSF | 6,680 | 6,813 | 7,115 | 7,455 | 7,663 | 7,720 | 7,779 | 8,085 | 8,089 |
| USDA | NA | NA | NA | 1,993 | 2,111 | 2,392 | 2,379 | 2,489 | 2,382 |
| All other Federal | 10,580 | 10,391 | 9,873 | 8,229 | 8,296 | 7,973 | 8,047 | 8,889 | 9,886 |
| Institutional support | 75,018 | 77,057 | 79,633 | 80,389 | 83,398 | 85,334 | 87,477 | 90,091 | 92,835 |
| Other outside support, total | 15,048 | 15,124 | 14,517 | 15,328 | 15,023 | 14,280 | 14,474 | 14,509 | 14,581 |
| All other U.S. | 8,935 | 9,064 | 9,087 | 10,267 | 10,066 | 9,700 | 9,949 | 10,354 | 10,543 |
| Foreign | 6,113 | 6,060 | 5,430 | 5,061 | 4,957 | 4,580 | 4,525 | 4,155 | 4,038 |
| Self-support | 52,427 | 53,915 | 52,076 | 51,915 | 52,287 | 52,789 | 52,033 | 53,237 | 55,690 |
| Physical sciences | | | | | | | | | |
| Total, all sources | 24,040 | 25,205 | 25,852 | 26,669 | 27,764 | 28,414 | 28,574 | 29,193 | 29,573 |
| Federal, total | 7,713 | 8,126 | 8,640 | 8,821 | 9,523 | 9,717 | 9,857 | 10,247 | 10,333 |
| Dept of Defense | 707 | 851 | 1,011 | 1,024 | 1,161 | 1,292 | 1,475 | 1,392 | 1,216 |
| Dept of HHS, total | 1,518 | 1,535 | 1,628 | 1,796 | 2,012 | 2,097 | 2,152 | 2,111 | 2,116 |
| NIH | [illegible] | 1,437 | 1,506 | 1,635 | 1,847 | 1,930 | 2,002 | 1,981 | 1,972 |
| Other HHS | [illegible] | 98 | 122 | 161 | 165 | 167 | 150 | 130 | 144 |
| NSF | 3,114 | 3,218 | 3,406 | 3,516 | 3,671 | 3,590 | 3,656 | 3,612 | 3,576 |
| USDA | NA | NA | NA | 35 | 31 | 44 | 32 | 43 | 54 |
| All other Federal | 2,374 | 2,542 | 2,595 | 2,450 | 2,648 | 2,694 | 2,542 | 3,089 | 3,371 |
| Institutional support | 13,001 | 13,601 | 13,701 | 13,962 | 14,417 | 14,821 | 14,860 | 15,138 | 15,239 |
| Other outside support, total | 1,785 | 1,705 | 1,830 | 2,091 | 1,931 | 1,873 | 1,980 | 2,019 | 2,009 |
| All other U.S. | 1,330 | 1,237 | 1,391 | 1,656 | 1,588 | 1,596 | 1,662 | 1,763 | 1,755 |
| Foreign | 455 | 468 | 439 | 435 | 343 | 277 | 318 | 256 | 254 |
| Self-support | 1,541 | 1,773 | 1,681 | 1,795 | 1,893 | 2,003 | 1,877 | 1,789 | 1,992 |
| Earth, atmospheric, and ocean sciences | | | | | | | | | |
| Total, all sources | 11,436 | 12,049 | 11,819 | 11,439 | 11,323 | 10,543 | 10,296 | 10,138 | 10,295 |
| Federal, total | 2,854 | 2,874 | 2,848 | 2,960 | 3,033 | 2,868 | 2,799 | 2,863 | 2,939 |
| Dept of Defense | 300 | 365 | 372 | 418 | 453 | 499 | 461 | 435 | 409 |
| Dept of HHS, total | 77 | 38 | 41 | 41 | 39 | 58 | 51 | 25 | 34 |
| NIH | 42 | 15 | 30 | 26 | 25 | 24 | 19 | 17 | 21 |
| Other HHS | 35 | 23 | 11 | 15 | 14 | 34 | 32 | 8 | 13 |
| NSF | 1,192 | 1,325 | 1,341 | 1,374 | 1,357 | 1,261 | 1,236 | 1,253 | 1,191 |
| USDA | NA | NA | NA | 42 | 18 | 33 | 45 | 43 | 63 |
| All other Federal | 1,285 | 1,146 | 1,094 | 1,085 | 1,166 | 1,017 | 1,006 | 1,107 | 1,242 |
| Institutional support | 4,254 | 4,261 | 4,381 | 4,160 | 4,380 | 4,226 | 4,336 | 4,353 | 4,270 |
| Other outside support, total | 1,220 | 1,293 | 1,259 | 1,401 | 1,186 | 1,006 | 1,043 | 1,004 | 981 |
| All other U.S. | 856 | 985 | 940 | 1,038 | 874 | 679 | 679 | 663 | 706 |
| Foreign | 364 | 308 | 319 | 363 | 312 | 327 | 364 | 341 | 275 |
| Self-support | 3,108 | 3,621 | 3,331 | 2,918 | 2,724 | 2,443 | 2,118 | 1,918 | 2,105 |
| Mathematical sciences | | | | | | | | | |
| Total, all sources | 10,823 | 10,964 | 11,319 | 11,833 | 12,398 | 13,049 | 13,523 | 13,705 | 13,870 |
| Federal, total | 818 | 760 | 762 | 935 | 999 | 1,090 | 1,190 | 1,211 | 1,346 |
| Dept of Defense | 374 | 310 | 304 | 386 | 432 | 438 | 513 | 395 | 367 |
| Dept of HHS, total | 39 | 41 | 26 | 21 | 24 | 30 | 28 | 36 | 49 |
| NIH | 25 | 28 | 22 | 18 | 19 | 24 | 25 | 28 | 39 |
| Other HHS | 14 | 13 | 4 | 3 | 5 | 6 | 3 | 8 | 10 |
| NSF | 228 | 223 | 279 | 321 | 357 | 436 | 463 | 475 | 500 |
| USDA | NA | NA | NA | 13 | 18 | 16 | 20 | 22 | 23 |
| All other Federal | 177 | 186 | 153 | 194 | 168 | 170 | 166 | 283 | 407 |
| Institutional support | 7,159 | 7,493 | 7,767 | 8,111 | 8,485 | 8,836 | 9,136 | 9,390 | 9,480 |
| Other outside support, total | 544 | 511 | 632 | 549 | 598 | 548 | 617 | 604 | 562 |
| All other U.S. | 185 | 174 | 272 | 257 | 253 | 239 | 351 | 367 | 327 |
| Foreign | 359 | 337 | 360 | 292 | 345 | 309 | 266 | 237 | 235 |
| Self-support | 2,302 | 2,200 | 2,158 | 2,238 | 2,316 | 2,575 | 2,580 | 2,500 | 2,482 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 10. Full-time science and engineering graduate students in all institutions by field and source of major support: 1982-90

Page 2 of 4

| Field and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| **Computer sciences** | | | | | | | | | |
| Total, all sources | 9,171 | 10,687 | 11,587 | 14,101 | 15,310 | 15,572 | 15,596 | 16,008 | 16,872 |
| Federal, total | 1,075 | 1,130 | 1,269 | 1,638 | 1,892 | 2,084 | 2,226 | 2,361 | 2,444 |
| Dept of Defense | 387 | 475 | 630 | 860 | 1,037 | 1,137 | 1,214 | 1,164 | 1,129 |
| Dept of HHS, total | 47 | 29 | 25 | 21 | 45 | 62 | 64 | 60 | 71 |
| NIH | 42 | 26 | 24 | 20 | 43 | 61 | 64 | 53 | 62 |
| Other HHS | 5 | 3 | 1 | 1 | 2 | 1 | 0 | 7 | 9 |
| NSF | 389 | 386 | 431 | 502 | 527 | 623 | 634 | 779 | 819 |
| USDA | NA | NA | NA | 4 | 3 | 17 | 10 | 7 | 14 |
| All other Federal | 252 | 240 | 183 | 251 | 280 | 245 | 304 | 351 | 411 |
| Institutional support | 2,724 | 3,216 | 3,691 | 4,308 | 4,573 | 5,000 | 5,162 | 5,337 | 5,592 |
| Other outside support, total | 799 | 834 | 818 | 1,378 | 1,554 | 1,283 | 1,300 | 1,265 | 1,301 |
| All other U.S. | 579 | 576 | 563 | 1,024 | 1,218 | 983 | 971 | 933 | 950 |
| Foreign | 220 | 258 | 255 | 354 | 336 | 300 | 329 | 332 | 351 |
| Self-support | 4,573 | 5,507 | 5,809 | 6,777 | 7,291 | 7,205 | 6,908 | 7,045 | 7,535 |
| **Agricultural sciences** | | | | | | | | | |
| Total, all sources | 9,891 | 9,836 | 9,750 | 9,097 | 9,229 | 8,983 | 8,986 | 8,926 | 8,961 |
| Federal, total | 1,671 | 1,545 | 1,395 | 1,539 | 1,638 | 1,699 | 1,742 | 1,773 | 1,722 |
| Dept of Defense | 8 | 15 | 17 | 28 | 17 | 30 | 32 | 13 | 18 |
| Dept of HHS, total | 38 | 25 | 18 | 17 | 15 | 29 | 32 | 28 | 36 |
| NIH | 33 | 19 | 17 | 17 | 14 | 22 | 31 | 17 | 31 |
| Other HHS | 5 | 6 | 1 | 0 | 1 | 7 | 1 | 11 | 5 |
| NSF | 72 | 67 | 68 | 94 | 71 | 59 | 49 | 47 | 59 |
| USDA | NA | NA | NA | 682 | 896 | 937 | 943 | 1,053 | 880 |
| All other Federal | 1,553 | 1,438 | 1,292 | 718 | 639 | 644 | 686 | 632 | 729 |
| Institutional support | 3,514 | 3,645 | 3,929 | 3,449 | 3,599 | 3,565 | 3,446 | 3,400 | 3,425 |
| Other outside support, total | 2,046 | 2,111 | 1,955 | 1,875 | 1,774 | 1,595 | 1,684 | 1,628 | 1,737 |
| All other U.S. | 884 | 949 | 913 | 1,007 | 913 | 801 | 918 | 993 | 1,104 |
| Foreign | 1,162 | 1,162 | 1,042 | 868 | 861 | 794 | 766 | 635 | 633 |
| Self-support | 2,660 | 2,535 | 2,471 | 2,234 | 2,218 | 2,124 | 2,114 | 2,125 | 2,077 |
| **Biological sciences** | | | | | | | | | |
| Total, all sources | 36,989 | 37,112 | 37,480 | 37,362 | 38,178 | 38,789 | 39,772 | 40,984 | 41,685 |
| Federal, total | 10,270 | 10,369 | 10,495 | 10,785 | 11,229 | 11,959 | 12,595 | 13,389 | 13,811 |
| Dept of Defense | 123 | 243 | 241 | 220 | 192 | 251 | 288 | 262 | 242 |
| Dept of HHS, total | 7,004 | 7,169 | 7,272 | 7,450 | 7,951 | 8,410 | 8,979 | 9,687 | 9,976 |
| NIH | 6,680 | 6,859 | 7,049 | 7,093 | 7,582 | 8,076 | 8,711 | 9,332 | 9,608 |
| Other HHS | 324 | 310 | 223 | 357 | 369 | 334 | 268 | 355 | 368 |
| NSF | 1,131 | 1,065 | 1,083 | 1,077 | 1,084 | 1,141 | 1,126 | 1,259 | 1,223 |
| USDA | NA | NA | NA | 815 | 819 | 992 | 1,007 | 971 | 986 |
| All other Federal | 2,012 | 1,892 | 1,899 | 1,223 | 1,183 | 1,165 | 1,195 | 1,210 | 1,384 |
| Institutional support | 16,610 | 16,741 | 17,275 | 17,158 | 17,739 | 17,789 | 18,083 | 18,635 | 19,108 |
| Other outside support, total | 3,132 | 3,238 | 3,137 | 3,280 | 3,099 | 3,203 | 3,485 | 3,534 | 3,649 |
| All other U.S. | 2,019 | 2,089 | 2,104 | 2,339 | 2,157 | 2,312 | 2,630 | 2,709 | 2,897 |
| Foreign | 1,113 | 1,149 | 1,033 | 941 | 942 | 891 | 855 | 825 | 752 |
| Self-support | 6,977 | 6,764 | 6,573 | 6,139 | 6,111 | 5,838 | 5,609 | 5,426 | 5,117 |
| **Psychology** | | | | | | | | | |
| Total, all sources | 25,812 | 26,701 | 26,108 | 25,769 | 26,521 | 27,497 | 28,480 | 30,172 | 30,992 |
| Federal, total | 2,414 | 2,141 | 2,062 | 2,057 | 2,035 | 2,052 | 2,173 | 2,215 | 2,401 |
| Dept of Defense | 128 | 174 | 157 | 140 | 158 | 177 | 156 | 117 | 159 |
| Dept of HHS, total | 1,323 | 1,026 | 1,043 | 1,056 | 950 | 1,009 | 1,124 | 1,183 | 1,274 |
| NIH | 716 | 600 | 647 | 622 | 589 | 630 | 763 | 720 | 799 |
| Other HHS | 607 | 426 | 396 | 434 | 361 | 379 | 361 | 463 | 475 |
| NSF | 206 | 190 | 206 | 235 | 231 | 246 | 233 | 236 | 261 |
| USDA | NA | NA | NA | 13 | 9 | 18 | 25 | 29 | 37 |
| All other Federal | 757 | 751 | 656 | 613 | 687 | 602 | 635 | 650 | 670 |
| Institutional support | 9,349 | 9,825 | 10,251 | 10,514 | 10,947 | 10,909 | 11,326 | 11,801 | 12,199 |
| Other outside support, total | 1,397 | 1,353 | 1,379 | 1,379 | 1,414 | 1,281 | 1,059 | 1,144 | 1,142 |
| All other U.S. | 1,315 | 1,282 | 1,310 | 1,322 | 1,344 | 1,219 | 995 | 1,089 | 1,086 |
| Foreign | 82 | 71 | 69 | 57 | 70 | 62 | 64 | 55 | 56 |
| Self-support | 12,652 | 13,382 | 12,416 | 11,819 | 12,125 | 13,255 | 13,922 | 15,012 | 15,250 |
| **Social sciences** | | | | | | | | | |
| Total, all sources | 44,375 | 43,695 | 42,739 | 43,060 | 42,993 | 43,638 | 44,016 | 45,569 | 48,826 |
| Federal, total | 3,229 | 3,208 | 2,957 | 2,963 | 2,659 | 2,613 | 2,677 | 2,799 | 2,972 |
| Dept of Defense | 267 | 324 | 333 | 202 | 148 | 154 | 167 | 174 | 201 |
| Dept of HHS, total | 444 | 351 | 322 | 321 | 304 | 324 | 318 | 313 | 314 |
| NIH | 207 | 212 | 211 | 197 | 202 | 209 | 207 | 201 | 210 |
| Other HHS | 237 | 139 | 111 | 124 | 102 | 115 | 111 | 112 | 104 |
| NSF | 348 | 339 | 301 | 336 | 365 | 364 | 382 | 424 | 460 |
| USDA | NA | NA | NA | 389 | 317 | 335 | 297 | 321 | 325 |
| All other Federal | 2,170 | 2,194 | 2,001 | 1,695 | 1,525 | 1,436 | 1,513 | 1,567 | 1,672 |
| Institutional support | 18,407 | 18,275 | 18,638 | 18,727 | 19,258 | 20,188 | 21,128 | 22,037 | 23,522 |
| Other outside support, total | 4,125 | 4,079 | 3,507 | 3,375 | 3,467 | 3,491 | 3,306 | 3,311 | 3,200 |
| All other U.S. | 1,767 | 1,772 | 1,594 | 1,624 | 1,719 | 1,871 | 1,743 | 1,837 | 1,718 |
| Foreign | 2,358 | 2,307 | 1,913 | 1,751 | 1,748 | 1,620 | 1,563 | 1,474 | 1,482 |
| Self-support | 18,614 | 18,133 | 17,637 | 17,995 | 17,609 | 17,346 | 16,905 | 17,422 | 19,132 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 10. Full-time science and engineering graduate students in all institutions by field and source of major support: 1982-90

| Field and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| **Engineering, total** | | | | | | | | | |
| Total, all sources | 50,233 | 54,321 | 55,528 | 56,283 | 60,708 | 62,167 | 63,400 | 66,716 | 66,547 |
| Federal, total | 11,095 | 11,985 | 11,590 | 11,267 | 12,379 | 13,120 | 14,020 | 14,345 | 14,907 |
| Dept of Defense | 3,455 | 4,016 | 3,808 | 3,774 | 4,115 | 4,585 | 4,970 | 4,808 | 4,616 |
| Dept of HHS, total | 505 | 575 | 544 | 524 | 536 | 629 | 628 | 729 | 796 |
| NIH | 403 | 477 | 466 | 455 | 449 | 515 | 555 | 644 | 674 |
| Other HHS | 102 | 98 | 78 | 69 | 87 | 114 | 73 | 85 | 122 |
| NSF | 2,573 | 2,681 | 2,697 | 2,687 | 3,130 | 3,480 | 3,808 | 3,766 | 3,872 |
| USDA | NA | NA | NA | 164 | 194 | 256 | 197 | 210 | 293 |
| All other Federal | 4,562 | 4,715 | 4,541 | 4,118 | 4,406 | 4,170 | 4,417 | 4,832 | 5,330 |
| Institutional support | 15,565 | 16,461 | 17,508 | 18,525 | 20,406 | 21,428 | 21,629 | 22,803 | 23,272 |
| Other outside support, total | 7,855 | 8,205 | 8,751 | 9,681 | 10,239 | 9,777 | 10,083 | 10,062 | 10,470 |
| All other U.S. | 5,339 | 5,764 | 6,496 | 7,467 | 8,029 | 7,710 | 8,060 | 8,006 | 8,396 |
| Foreign | 2,516 | 2,441 | 2,255 | 2,214 | 2,210 | 2,067 | 2,023 | 2,056 | 2,074 |
| Self-support | 15,718 | 17,670 | 17,679 | 16,810 | 17,684 | 17,842 | 17,668 | 17,506 | 17,898 |
| **Chemical engineering** | | | | | | | | | |
| Total, all sources | 5,608 | 5,869 | 5,734 | 5,546 | 5,594 | 5,674 | 5,359 | 5,282 | 5,453 |
| Federal, total | 1,282 | 1,361 | 1,315 | 1,289 | 1,394 | 1,501 | 1,452 | 1,476 | 1,558 |
| Dept of Defense | 76 | 99 | 92 | 90 | 101 | 150 | 145 | 130 | 98 |
| Dept of HHS, total | 52 | 53 | 67 | 53 | 69 | 78 | 83 | 87 | 122 |
| NIH | 39 | 41 | 60 | 52 | 67 | 70 | 79 | 87 | 120 |
| Other HHS | 13 | 12 | 7 | 1 | 2 | 8 | 4 | 0 | 2 |
| NSF | 547 | 602 | 606 | 622 | 652 | 692 | 683 | 654 | 682 |
| USDA | NA | NA | NA | 9 | 6 | 24 | 7 | 13 | 39 |
| All other Federal | 607 | 607 | 550 | 515 | 566 | 557 | 534 | 592 | 617 |
| Institutional support | 1,956 | 2,056 | 2,038 | 2,022 | 2,048 | 2,055 | 2,021 | 1,959 | 2,096 |
| Other outside support, total | 1,215 | 1,255 | 1,355 | 1,356 | 1,314 | 1,340 | 1,287 | 1,290 | 1,258 |
| All other U.S. | 1,038 | 1,058 | 1,202 | 1,207 | 1,185 | 1,212 | 1,174 | 1,196 | 1,159 |
| Foreign | 177 | 197 | 153 | 149 | 129 | 128 | 113 | 94 | 99 |
| Self-support | 1,155 | 1,197 | 1,026 | 879 | 838 | 778 | 599 | 557 | 541 |
| **Civil engineering** | | | | | | | | | |
| Total, all sources | 9,762 | 10,185 | 10,455 | 10,092 | 10,352 | 9,857 | 10,157 | 10,183 | 10,445 |
| Federal, total | 1,334 | 1,347 | 1,354 | 1,310 | 1,371 | 1,432 | 1,512 | 1,403 | 1,527 |
| Dept of Defense | 155 | 166 | 224 | 256 | 250 | 277 | 327 | 280 | 235 |
| Dept of HHS, total | 26 | 26 | 8 | 18 | 28 | 12 | 5 | 18 | 15 |
| NIH | 18 | 16 | 8 | 9 | 18 | 8 | 3 | 16 | 11 |
| Other HHS | 8 | 10 | 0 | 9 | 10 | 4 | 2 | 2 | 4 |
| NSF | 383 | 371 | 371 | 356 | 391 | 462 | 420 | 382 | 431 |
| USDA | NA | NA | NA | 6 | 23 | 37 | 37 | 33 | 36 |
| All other Federal | 770 | 784 | 751 | 674 | 679 | 644 | 723 | 690 | 810 |
| Institutional support | 2,888 | 3,007 | 3,097 | 3,270 | 3,690 | 3,642 | 3,893 | 3,972 | 3,918 |
| Other outside support, total | 1,206 | 1,350 | 1,364 | 1,329 | 1,273 | 1,118 | 1,128 | 1,210 | 1,267 |
| All other U.S. | 678 | 816 | 878 | 890 | 824 | 706 | 709 | 729 | 833 |
| Foreign | 528 | 534 | 486 | 439 | 449 | 412 | 419 | 481 | 434 |
| Self-support | 4,334 | 4,481 | 4,640 | 4,183 | 4,018 | 3,665 | 3,624 | 3,598 | 3,733 |
| **Electrical engineering** | | | | | | | | | |
| Total, all sources | 11,533 | 13,203 | 13,857 | 14,752 | 16,322 | 17,060 | 17,653 | 18,396 | 18,710 |
| Federal, total | 2,671 | 2,961 | 2,757 | 2,391 | 2,794 | 3,051 | 3,499 | 3,570 | 3,686 |
| Dept of Defense | 1,431 | 1,704 | 1,556 | 1,298 | 1,415 | 1,582 | 1,665 | 1,648 | 1,543 |
| Dept of HHS, total | 86 | 103 | 95 | 81 | 80 | 88 | 124 | 93 | 129 |
| NIH | 59 | 77 | 75 | 62 | 57 | 56 | 99 | 73 | 85 |
| Other HHS | 27 | 26 | 20 | 19 | 23 | 32 | 25 | 20 | 44 |
| NSF | 612 | 639 | 598 | 556 | 757 | 848 | 1,140 | 1,085 | 1,125 |
| USDA | NA | NA | NA | 5 | 4 | 15 | 17 | 20 | 66 |
| All other Federal | 542 | 515 | 508 | 451 | 538 | 518 | 553 | 724 | 823 |
| Institutional support | 3,621 | 3,900 | 4,355 | 4,933 | 5,201 | 5,583 | 5,648 | 6,260 | 6,304 |
| Other outside support, total | 1,726 | 1,962 | 2,249 | 2,431 | 3,155 | 2,760 | 2,807 | 2,856 | 2,959 |
| All other U.S. | 1,296 | 1,466 | 1,716 | 1,848 | 2,533 | 2,183 | 2,361 | 2,366 | 2,429 |
| Foreign | 430 | 496 | 533 | 583 | 622 | 577 | 446 | 490 | 530 |
| Self-support | 3,515 | 4,380 | 4,496 | 4,997 | 5,172 | 5,666 | 5,699 | 5,710 | 5,761 |
| **Industrial engineering** | | | | | | | | | |
| Total, all sources | 3,831 | 3,334 | 3,438 | 3,530 | 3,886 | 4,255 | 4,399 | 4,760 | 4,966 |
| Federal, total | 357 | 423 | 412 | 396 | 378 | 470 | 557 | 589 | 653 |
| Dept of Defense | 147 | 164 | 133 | 187 | 148 | 213 | 283 | 288 | 308 |
| Dept of HHS, total | 53 | 50 | 49 | 45 | 45 | 44 | 39 | 59 | 60 |
| NIH | 23 | 31 | 25 | 30 | 14 | 23 | 22 | 25 | 27 |
| Other HHS | 30 | 19 | 24 | 15 | 31 | 21 | 17 | 34 | 33 |
| NSF | 36 | 41 | 56 | 42 | 80 | 97 | 114 | 125 | 128 |
| USDA | NA | NA | NA | 1 | 1 | 1 | 1 | 0 | 1 |
| All other Federal | 121 | 168 | 174 | 121 | 104 | 115 | 120 | 117 | 156 |
| Institutional support | 1,249 | 1,055 | 1,143 | 1,232 | 1,345 | 1,513 | 1,482 | 1,666 | 1,712 |
| Other outside support, total | 438 | 328 | 380 | 426 | 449 | 452 | 508 | 537 | 575 |
| All other U.S. | 193 | 174 | 264 | 316 | 360 | 370 | 396 | 388 | 417 |
| Foreign | 245 | 154 | 116 | 110 | 89 | 82 | 112 | 149 | 158 |
| Self-support | 1,787 | 1,528 | 1,503 | 1,476 | 1,714 | 1,820 | 1,852 | 1,968 | 2,026 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 10. Full-time science and engineering graduate students in all institutions by field and source of major support: 1982-90

| Field and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| **Mechanical engineering** | | | | | | | | | |
| Total, all sources | 7,267 | 8,330 | [illegible] | 8,875 | 9,801 | 10,175 | 10,438 | 10,426 | 10,843 |
| Federal, total | 1,415 | 1,564 | [illegible] | 1,907 | 2,048 | 2,264 | 2,435 | 2,485 | 2,567 |
| Dept of Defense | 289 | 393 | [illegible] | 540 | 633 | 770 | 819 | 840 | 755 |
| Dept of HHS, total | 65 | 73 | 64 | 89 | 61 | 84 | 70 | 61 | 73 |
| NIH | 54 | 65 | 58 | 72 | 52 | 67 | 65 | 54 | 72 |
| Other HHS | 11 | 8 | 6 | 17 | 9 | 17 | 5 | 7 | 1 |
| NSF | 307 | 352 | 391 | 439 | 477 | 591 | 661 | 632 | 645 |
| USDA | NA | NA | NA | 19 | 10 | 15 | 16 | 28 | 26 |
| All other Federal | 754 | 746 | 813 | 820 | 867 | 804 | 869 | 924 | 1,068 |
| Institutional support | 2,471 | 2,869 | 3,126 | 3,133 | 3,688 | 3,845 | 3,787 | 3,858 | 4,033 |
| Other outside support, total | 1,110 | 1,184 | 1,273 | 1,607 | 1,510 | 1,494 | 1,543 | 1,571 | 1,668 |
| All other U.S. | 855 | 872 | 957 | 1,354 | 1,255 | 1,278 | 1,310 | 1,334 | 1,396 |
| Foreign | 255 | 312 | 316 | 253 | 255 | 216 | 233 | 237 | 272 |
| Self-support | 2,271 | 2,713 | 2,649 | 2,228 | 2,555 | 2,572 | 2,673 | 2,512 | 2,575 |
| **Other engineering** | | | | | | | | | |
| Total, all sources | 12,232 | 13,400 | 13,346 | 13,488 | 14,753 | 15,166 | 15,394 | 15,669 | 16,130 |
| Federal, total | 4,036 | 4,329 | 4,102 | 3,974 | 4,394 | 4,402 | 4,565 | 4,822 | 4,916 |
| Dept of Defense | 1,357 | 1,508 | 1,421 | 1,403 | 1,568 | 1,593 | 1,731 | 1,622 | 1,677 |
| Dept of HHS, total | 223 | 270 | 261 | 238 | 253 | 323 | 307 | 411 | 397 |
| NIH | 210 | 247 | 240 | 230 | 241 | 291 | 287 | 389 | 359 |
| Other HHS | 13 | 23 | 21 | 8 | 12 | 32 | 20 | 22 | 38 |
| NSF | 688 | 676 | 675 | 672 | 773 | 790 | 790 | 888 | 861 |
| USDA | NA | NA | NA | 124 | 150 | 164 | 119 | 116 | 125 |
| All other Federal | 1,768 | 1,875 | 1,745 | 1,537 | 1,650 | 1,532 | 1,618 | 1,785 | 1,856 |
| Institutional support | 3,380 | 3,574 | 3,749 | 3,935 | 4,434 | 4,810 | 4,798 | 5,088 | 5,209 |
| Other outside support, total | 2,160 | 2,126 | 2,130 | 2,532 | 2,538 | 2,613 | 2,810 | 2,598 | 2,743 |
| All other U.S. | 1,279 | 1,378 | 1,479 | 1,852 | 1,872 | 1,961 | 2,110 | 1,993 | 2,162 |
| Foreign | 881 | 748 | 651 | 680 | 666 | 652 | 700 | 605 | 581 |
| Self-support | 2,656 | 3,371 | 3,365 | 3,047 | 3,387 | 3,341 | 3,221 | 3,161 | 3,262 |
| **Total, health fields** | | | | | | | | | |
| Total, all sources | 23,276 | 23,008 | 23,248 | 23,727 | 23,761 | 24,438 | 25,216 | 26,578 | 28,215 |
| Federal, total | 6,444 | 5,760 | 5,894 | 6,275 | 6,137 | 6,506 | 6,405 | 6,696 | 6,988 |
| Dept of Defense | 196 | 260 | 278 | 280 | 232 | 238 | 244 | 440 | 459 |
| Dept of HHS, total | 4,867 | 4,233 | 4,241 | 4,666 | 4,554 | 4,624 | 4,673 | 4,667 | 4,970 |
| NIH | 1,261 | 1,194 | 1,040 | 1,059 | 1,128 | 1,475 | 1,415 | 1,500 | 1,614 |
| Other HHS | 3,606 | 3,039 | 3,201 | 3,607 | 3,426 | 3,149 | 3,258 | 3,167 | 3,356 |
| NSF | 34 | 30 | 41 | 41 | 41 | 47 | 46 | 50 | 55 |
| USDA | NA | NA | NA | 24 | 42 | 48 | 31 | 46 | 58 |
| All other Federal | 1,347 | 1,237 | 1,334 | 1,264 | 1,268 | 1,549 | 1,411 | 1,493 | 1,446 |
| Institutional support | 4,975 | 5,026 | 5,421 | 5,709 | 5,938 | 5,982 | 6,351 | 6,959 | 7,348 |
| Other outside support, total | 1,353 | 1,622 | 1,642 | 1,669 | 1,586 | 1,534 | 1,300 | 1,440 | 1,421 |
| All other U.S. | 909 | 1,132 | 1,141 | 1,137 | 1,049 | 1,014 | 898 | 945 | 941 |
| Foreign | 444 | 490 | 501 | 532 | 537 | 520 | 402 | 495 | 480 |
| Self-support | 10,504 | 10,600 | 10,291 | 10,074 | 10,100 | 10,416 | 11,160 | 11,483 | 12,458 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: NA = Not available

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 11. Full-time science and engineering graduate students in all institutions by type and source of major support: 1982-90

Page 1 of 2

| Type and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| **Total, all types** | | | | | | | | | |
| Total, all sources | 246,046 | 253,578 | 255,430 | 259,320 | 268,185 | 273,090 | 277,859 | 285,989 | 295,836 |
| Federal, total | 47,583 | 47,898 | 47,912 | 49,220 | 51,524 | 53,708 | 55,684 | 57,899 | 59,863 |
| Dept of Defense | 5,945 | 7,011 | 7,151 | 7,332 | 7,945 | 8,801 | 9,520 | 9,200 | 8,816 |
| Dept of HHS, total | 15,862 | 15,020 | 15,160 | 15,913 | 16,430 | 17,272 | 18,049 | 18,839 | 19,636 |
| NIH | 10,844 | 10,867 | 11,012 | 11,142 | 11,898 | 12,966 | 13,792 | 14,493 | 15,030 |
| Other HHS | 5,018 | 4,153 | 4,148 | 4,771 | 4,532 | 4,306 | 4,257 | 4,346 | 4,606 |
| NSF | 9,287 | 9,524 | 9,853 | 10,183 | 10,834 | 11,247 | 11,633 | 11,901 | 12,016 |
| USDA | NA | NA | NA | 2,181 | 2,347 | 2,696 | 2,607 | 2,745 | 2,733 |
| All other Federal | 16,489 | 16,343 | 15,748 | 13,611 | 13,968 | 13,692 | 13,875 | 15,214 | 16,662 |
| Institutional support | 95,558 | 98,544 | 102,562 | 104,623 | 109,742 | 112,744 | 115,457 | 119,853 | 123,455 |
| Other outside support, total | 24,256 | 24,951 | 24,910 | 26,678 | 26,848 | 25,591 | 25,857 | 26,011 | 26,472 |
| All other U.S. | 15,183 | 15,960 | 16,724 | 18,871 | 19,144 | 18,424 | 18,907 | 19,305 | 19,880 |
| Foreign | 9,073 | 8,991 | 8,186 | 7,807 | 7,704 | 7,167 | 6,950 | 6,706 | 6,592 |
| Self-support | 78,649 | 82,185 | 80,046 | 78,799 | 80,071 | 81,047 | 80,861 | 82,226 | 86,046 |
| **Fellowships** | | | | | | | | | |
| Total, all sources | 21,018 | 21,512 | 21,774 | 22,771 | 23,160 | 22,271 | 22,756 | 23,847 | 25,642 |
| Federal, total | 4,119 | 4,136 | 4,140 | 4,437 | 4,607 | 4,467 | 4,598 | 5,239 | 6,385 |
| Dept of Defense | 204 | 257 | 240 | 263 | 294 | 366 | 360 | 420 | 583 |
| Dept of HHS, total | 839 | 776 | 793 | 878 | 826 | 863 | 880 | 950 | 1,076 |
| NIH | 629 | 574 | 613 | 635 | 654 | 700 | 703 | 723 | 883 |
| Other HHS | 210 | 202 | 180 | 243 | 172 | 163 | 177 | 227 | 193 |
| NSF | 1,306 | 1,307 | 1,340 | 1,399 | 1,512 | 1,489 | 1,588 | 1,784 | 2,101 |
| USDA | NA | NA | NA | 150 | 166 | 151 | 95 | 106 | 110 |
| All other Federal | 1,770 | 1,796 | 1,767 | 1,747 | 1,809 | 1,598 | 1,675 | 1,979 | 2,515 |
| Institutional support | 9,484 | 9,915 | 10,426 | 11,306 | 11,769 | 11,682 | 12,137 | 12,645 | 13,332 |
| Other outside support, total | 7,415 | 7,461 | 7,210 | 7,028 | 6,784 | 6,122 | 6,021 | 5,963 | 5,925 |
| All other U.S. | 3,662 | 3,826 | 4,016 | 4,161 | 4,034 | 3,718 | 3,471 | 3,609 | 3,695 |
| Foreign | 3,753 | 3,635 | 3,194 | 2,867 | 2,750 | 2,404 | 2,550 | 2,354 | 2,230 |
| Self-support | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Traineeships** | | | | | | | | | |
| Total, all sources | 14,740 | 13,600 | 13,537 | 13,758 | 13,613 | 14,114 | 14,410 | 14,615 | 15,204 |
| Federal, total | 10,166 | 9,178 | 9,031 | 9,036 | 8,768 | 9,020 | 8,760 | 8,848 | 9,366 |
| Dept of Defense | 34 | 84 | 62 | 49 | 79 | 137 | 136 | 118 | 124 |
| Dept of HHS, total | 8,746 | 7,713 | 7,550 | 7,665 | 7,425 | 7,374 | 7,294 | 7,172 | 7,603 |
| NIH | 4,666 | 4,497 | 4,297 | 4,094 | 3,942 | 4,244 | 4,125 | 4,099 | 4,376 |
| Other HHS | 4,080 | 3,216 | 3,253 | 3,571 | 3,483 | 3,130 | 3,169 | 3,073 | 3,227 |
| NSF | 90 | 61 | 49 | 56 | 27 | 83 | 68 | 89 | 54 |
| USDA | NA | NA | NA | 71 | 57 | 87 | 44 | 48 | 57 |
| All other Federal | 1,296 | 1,320 | 1,370 | 1,195 | 1,180 | 1,339 | 1,218 | 1,421 | 1,528 |
| Institutional support | 3,447 | 3,318 | 3,515 | 3,724 | 3,892 | 4,182 | 4,685 | 4,840 | 5,022 |
| Other outside support, total | 1,127 | 1,104 | 991 | 998 | 953 | 912 | 965 | 927 | 816 |
| All other U.S. | 817 | 740 | 718 | 700 | 733 | 656 | 723 | 650 | 578 |
| Foreign | 310 | 364 | 273 | 298 | 220 | 256 | 242 | 277 | 238 |
| Self-support | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Research assistantships** | | | | | | | | | |
| Total, all sources | 52,681 | 55,051 | 57,845 | 61,137 | 66,193 | 70,303 | 74,645 | 79,216 | 81,038 |
| Federal, total | 28,320 | 29,171 | 29,467 | 30,440 | 32,758 | 34,990 | 36,759 | 38,510 | 38,468 |
| Dept of Defense | 3,467 | 3,934 | 4,081 | 4,195 | 4,646 | 5,603 | 5,995 | 5,879 | 5,312 |
| Dept of HHS, total | 5,789 | 5,998 | 6,340 | 6,866 | 7,684 | 8,440 | 9,336 | 10,227 | 10,437 |
| NIH | 5,280 | 5,449 | 5,757 | 6,113 | 6,973 | 7,611 | 8,552 | 9,293 | 9,403 |
| Other HHS | 509 | 549 | 583 | 753 | 711 | 829 | 784 | 934 | 1,034 |
| NSF | 7,751 | 8,067 | 8,288 | 8,559 | 9,091 | 9,486 | 9,820 | 9,867 | 9,697 |
| USDA | NA | NA | NA | 1,827 | 1,971 | 2,336 | 2,316 | 2,466 | 2,439 |
| All other Federal | 11,313 | 11,172 | 10,758 | 8,993 | 9,366 | 9,125 | 9,292 | 10,071 | 10,583 |
| Institutional support | 17,475 | 18,049 | 19,759 | 20,492 | 23,146 | 25,079 | 26,616 | 28,967 | 30,363 |
| Other outside support, total | 6,886 | 7,831 | 8,619 | 10,205 | 10,289 | 10,234 | 11,270 | 11,739 | 12,207 |
| All other U.S. | 6,298 | 7,271 | 8,020 | 9,655 | 9,701 | 9,626 | 10,652 | 11,062 | 11,479 |
| Foreign | 588 | 560 | 599 | 550 | 588 | 608 | 618 | 677 | 728 |
| Self-support | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Teaching assistantships** | | | | | | | | | |
| Total, all sources | 58,386 | 60,168 | 61,378 | 61,990 | 62,706 | 62,989 | 63,338 | 64,550 | 65,058 |
| Federal, total | 429 | 501 | 405 | 562 | 497 | 447 | 504 | 491 | 618 |
| Dept of Defense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dept of HHS, total | 108 | 112 | 73 | 98 | 110 | 153 | 143 | 144 | 121 |
| NIH | 49 | 75 | 44 | 59 | 82 | 125 | 118 | 129 | 97 |
| Other HHS | 59 | 37 | 29 | 39 | 28 | 28 | 25 | 15 | 24 |
| NSF | 27 | 25 | 28 | 43 | 75 | 27 | 58 | 66 | 86 |
| USDA | NA | NA | NA | 40 | 33 | 17 | 44 | 33 | 44 |
| All other Federal | 294 | 364 | 304 | 381 | 279 | 250 | 259 | 248 | 367 |
| Institutional support | 57,481 | 59,276 | 60,536 | 60,906 | 61,681 | 62,061 | 62,347 | 63,493 | 63,908 |
| Other outside support, total | 476 | 391 | 437 | 522 | 528 | 481 | 487 | 566 | 532 |
| All other U.S. | 476 | 391 | 437 | 522 | 528 | 481 | 487 | 566 | 532 |
| Foreign | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Self-support | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 11. Full-time science and engineering graduate students in all institutions by type and source of major support: 1982-90

Page 2 of 2

| Type and source of major support | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Other types of support | | | | | | | | | |
| Total, all sources | 99,221 | 103,247 | 100,896 | 99,664 | 102,513 | 103,413 | 102,710 | 103,761 | 108,894 |
| Federal, total | 4,549 | 4,912 | 4,869 | 4,745 | 4,894 | 4,784 | 5,063 | 4,811 | 5,026 |
| Dept of Defense | 2,240 | 2,736 | 2,768 | 2,825 | 2,926 | 2,695 | 3,029 | 2,783 | 2,797 |
| Dept of HHS, total | 380 | 421 | 404 | 406 | 385 | 442 | 396 | 346 | 399 |
| NIH | 220 | 272 | 301 | 241 | 247 | 286 | 294 | 249 | 271 |
| Other HHS | 160 | 149 | 103 | 165 | 138 | 156 | 102 | 97 | 128 |
| NSF | 113 | 64 | 148 | 126 | 129 | 162 | 99 | 95 | 78 |
| USDA | NA | NA | NA | 93 | 120 | 105 | 108 | 92 | 83 |
| All other Federal | 1,816 | 1,691 | 1,549 | 1,295 | 1,334 | 1,380 | 1,431 | 1,495 | 1,669 |
| Institutional support | 7,671 | 7,986 | 8,328 | 8,195 | 9,254 | 9,740 | 9,672 | 9,908 | 10,830 |
| Other outside support, total | 8,352 | 8,164 | 7,653 | 7,925 | 8,294 | 7,842 | 7,114 | 6,816 | 6,992 |
| All other U.S. | 3,930 | 3,732 | 3,533 | 3,833 | 4,148 | 3,943 | 3,574 | 3,418 | 3,596 |
| Foreign | 4,422 | 4,432 | 4,120 | 4,092 | 4,146 | 3,899 | 3,540 | 3,398 | 3,396 |
| Self-support | 78,649 | 82,185 | 80,046 | 78,799 | 80,071 | 81,047 | 80,861 | 82,226 | 86,046 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: NA = Not available

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 12. Full-time science and engineering graduate students with U.S. citizenship in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 188,409 | 191,391 | 191,703 | 190,873 | 192,821 | 194,049 | 193,979 | 198,912 | 205,026 |
| Total, science/engineering fields | 167,434 | 170,791 | 170,798 | 169,688 | 171,761 | 172,372 | 171,841 | 175,610 | 180,360 |
| Engineering, total | 28,812 | 31,450 | 32,223 | 32,127 | 33,597 | 34,063 | 33,783 | 34,272 | 35,211 |
| Aerospace | 945 | 1,088 | 1,115 | 1,258 | 1,343 | 1,559 | 1,502 | 1,757 | 1,920 |
| Agricultural | 398 | 425 | 446 | 414 | 457 | 478 | 406 | 361 | 332 |
| Biomedical | 732 | 836 | 901 | 935 | 1,014 | 1,016 | 1,026 | 1,035 | 1,203 |
| Chemical | 3,267 | 3,630 | 3,603 | 3,337 | 3,412 | 3,362 | 2,967 | 2,677 | 2,702 |
| Civil | 5,714 | 5,820 | 5,948 | 5,568 | 5,572 | 5,240 | 5,359 | 5,251 | 5,585 |
| Electrical | 6,421 | 7,363 | 7,861 | 8,113 | 8,609 | 8,959 | 9,274 | 9,693 | 9,770 |
| Engineering science | 837 | 861 | 788 | 795 | 854 | 791 | 812 | 702 | 784 |
| Industrial | 2,205 | 1,962 | 1,967 | 1,907 | 2,085 | 2,191 | 2,284 | 2,470 | 2,580 |
| Mechanical | 3,767 | 4,327 | 4,591 | 4,858 | 5,226 | 5,526 | 5,314 | 5,576 | 5,785 |
| Metallurgical/materials | 1,297 | 1,530 | 1,663 | 1,802 | 1,841 | 1,803 | 1,778 | 1,869 | 2,003 |
| Mining | 251 | 273 | 283 | 256 | 250 | 239 | 196 | 153 | 139 |
| Nuclear | 569 | 591 | 606 | 600 | 614 | 594 | 644 | 628 | 577 |
| Petroleum | 216 | 330 | 327 | 327 | 305 | 326 | 237 | 207 | 155 |
| Engineering, n.e.c. | 2,193 | 2,414 | 2,124 | 1,957 | 2,015 | 1,979 | 1,986 | 1,893 | 1,676 |
| Sciences, total | 138,622 | 139,341 | 138,575 | 137,561 | 138,164 | 138,309 | 138,058 | 141,338 | 145,149 |
| Physical sciences | 17,555 | 17,973 | 18,250 | 18,186 | 18,266 | 18,386 | 18,090 | 18,063 | 17,898 |
| Astronomy | 488 | 480 | 479 | 485 | 494 | 509 | 545 | 604 | 603 |
| Chemistry | 11,071 | 11,498 | 11,488 | 11,485 | 11,484 | 11,295 | 10,764 | 10,542 | 10,302 |
| Physics | 5,915 | 5,911 | 6,136 | 6,072 | 6,157 | 6,410 | 6,674 | 6,815 | 6,871 |
| Physical sciences, n.e.c. | 81 | 84 | 147 | 144 | 131 | 172 | 107 | 102 | 122 |
| Earth, atmospheric, and ocean sciences | 9,789 | 10,358 | 10,224 | 9,748 | 9,432 | 8,575 | 8,116 | 7,813 | 7,827 |
| Atmospheric sciences | 592 | 603 | 612 | 676 | 649 | 605 | 598 | 575 | 564 |
| Geosciences | 6,608 | 7,280 | 7,194 | 6,758 | 6,365 | 5,565 | 5,119 | 4,707 | 4,412 |
| Oceanography | 1,253 | 1,235 | 1,302 | 1,250 | 1,304 | 1,295 | 1,192 | 1,277 | 1,334 |
| Earth, atmos., and ocean sci., n.e.c. | 1,336 | 1,240 | 1,116 | 1,064 | 1,114 | 1,110 | 1,207 | 1,254 | 1,517 |
| Mathematical sciences | 6,935 | 6,722 | 6,781 | 7,009 | 7,253 | 7,555 | 7,749 | 7,717 | 8,076 |
| Computer sciences | 5,981 | 6,724 | 7,052 | 8,551 | 9,176 | 9,087 | 8,776 | 8,941 | 8,932 |
| Agricultural sciences | 7,508 | 7,368 | 7,329 | 6,759 | 6,685 | 6,366 | 6,376 | 6,359 | 6,287 |
| Biological sciences | 31,950 | 31,579 | 31,660 | 30,990 | 30,943 | 30,691 | 30,669 | 30,838 | 30,850 |
| Anatomy | 849 | 847 | 878 | 800 | 772 | 776 | 793 | 784 | 713 |
| Biochemistry | 3,192 | 3,232 | 3,416 | 3,512 | 3,566 | 3,422 | 3,433 | 3,359 | 3,313 |
| Biology | 8,193 | 8,049 | 7,868 | 7,437 | 7,325 | 7,311 | 7,354 | 7,619 | 7,527 |
| Biometry/epidemiology | 769 | 720 | 628 | 823 | 832 | 926 | 939 | 938 | 916 |
| Biophysics | 353 | 357 | 339 | 288 | 329 | 343 | 365 | 402 | 407 |
| Botany | 2,574 | 2,431 | 2,374 | 2,209 | 2,126 | 1,935 | 1,788 | 1,698 | 1,569 |
| Cell biology | 1,007 | 1,010 | 1,062 | 1,217 | 1,380 | 1,553 | 1,618 | 1,700 | 1,973 |
| Ecology | 830 | 766 | 790 | 776 | 757 | 686 | 713 | 745 | 705 |
| Entomology/parasitology | 1,113 | 1,065 | 1,040 | 904 | 855 | 767 | 775 | 718 | 714 |
| Genetics | 810 | 819 | 852 | 891 | 966 | 964 | 923 | 983 | 1,026 |
| Microbiology | 3,082 | 3,192 | 3,281 | 3,226 | 3,146 | 3,210 | 3,357 | 3,249 | 3,229 |
| Nutrition | 2,279 | 2,167 | 2,127 | 2,115 | 2,150 | 2,047 | 1,902 | 1,876 | 1,857 |
| Pathology | 847 | 862 | 914 | 847 | 866 | 884 | 876 | 865 | 845 |
| Pharmacology | 1,697 | 1,759 | 1,742 | 1,800 | 1,703 | 1,608 | 1,611 | 1,693 | 1,707 |
| Physiology | 1,617 | 1,554 | 1,714 | 1,721 | 1,687 | 1,646 | 1,561 | 1,507 | 1,535 |
| Zoology | 2,005 | 1,910 | 1,719 | 1,540 | 1,532 | 1,564 | 1,458 | 1,505 | 1,398 |
| Biosciences, n.e.c. | 733 | 839 | 916 | 884 | 951 | 1,049 | 1,203 | 1,197 | 1,418 |
| Psychology | 24,733 | 25,607 | 25,063 | 24,608 | 25,351 | 26,282 | 27,149 | 28,811 | 29,494 |
| Social sciences | 34,171 | 33,010 | 32,216 | 31,710 | 31,058 | 31,367 | 31,133 | 32,796 | 35,785 |
| Agricultural economics | 1,276 | 1,282 | 1,263 | 1,222 | 1,205 | 1,120 | 1,039 | 996 | 1,031 |
| Anthropology | 3,719 | 3,538 | 3,582 | 3,461 | 3,515 | 3,516 | 3,615 | 3,756 | 4,053 |
| Economics (except agricultural) | 5,925 | 5,667 | 5,249 | 4,975 | 4,910 | 4,785 | 4,592 | 4,634 | 4,719 |
| Geography | 1,748 | 1,816 | 1,803 | 1,764 | 1,724 | 1,865 | 1,808 | 1,932 | 1,991 |
| History and philosophy of science | 188 | 189 | 201 | 176 | 198 | 226 | 221 | 258 | 296 |
| Linguistics | 1,447 | 1,525 | 1,481 | 1,394 | 1,397 | 1,497 | 1,526 | 1,456 | 1,520 |
| Political science | 11,178 | 10,703 | 10,238 | 10,569 | 10,462 | 10,104 | 10,407 | 11,383 | 12,760 |
| Sociology | 3,890 | 3,693 | 3,676 | 3,439 | 3,352 | 3,691 | 3,659 | 3,892 | 4,314 |
| Sociology/anthropology | 523 | 542 | 486 | 437 | 460 | 434 | 442 | 499 | 639 |
| Social sciences, n.e.c. | 4,277 | 4,055 | 4,239 | 4,273 | 3,835 | 4,129 | 3,824 | 3,990 | 4,462 |
| Total, health fields | 20,975 | 20,600 | 20,905 | 21,185 | 21,060 | 21,677 | 22,138 | 23,302 | 24,666 |
| Dentistry | 598 | 579 | 638 | 590 | 646 | 764 | 774 | 689 | 658 |
| Neurology | 188 | 231 | 284 | 301 | 325 | 406 | 493 | 583 | 654 |
| Nursing | 6,410 | 6,045 | 5,941 | 5,879 | 5,718 | 5,761 | 5,841 | 5,817 | 5,929 |
| Pharmaceutical sciences | 1,116 | 1,078 | 1,069 | 1,085 | 1,082 | 1,071 | 1,032 | 1,143 | 1,203 |
| Preventive medicine/community health | 3,361 | 3,243 | 3,293 | 3,338 | 3,269 | 3,338 | 3,345 | 3,331 | 3,525 |
| Speech pathology/audiology | 5,148 | 5,038 | 5,086 | 5,254 | 5,144 | 4,858 | 5,048 | 5,446 | 5,542 |
| Veterinary sciences | 285 | 252 | 315 | 382 | 368 | 439 | 445 | 479 | 508 |
| Clinical medicine, n.e.c. | 927 | 921 | 921 | 971 | 950 | 998 | 1,038 | 1,121 | 1,161 |
| Health related, n.e.c. | 2,942 | 3,213 | 3,360 | 3,385 | 3,558 | 4,042 | 4,122 | 4,693 | 5,486 |

1/ Includes estimated data for master's-granting institutions, were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 13. Full-time science and engineering graduate students without U.S. citizenship in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 57,637 | 62,187 | 63,727 | 68,447 | 75,364 | 79,041 | 83,880 | 87,077 | 90,810 |
| Total, science/engineering fields | 55,336 | 59,779 | 61,384 | 65,905 | 72,663 | 76,280 | 80,802 | 83,801 | 87,261 |
| Engineering, total | 21,421 | 22,871 | 23,305 | 24,156 | 27,111 | 28,104 | 29,617 | 30,444 | 31,336 |
| Aerospace | 577 | 752 | 739 | 736 | 811 | 813 | 1,031 | 1,015 | 1,090 |
| Agricultural | 341 | 341 | 327 | 353 | 426 | 446 | 473 | 490 | 461 |
| Biomedical | 199 | 195 | 220 | 194 | 280 | 376 | 431 | 576 | 595 |
| Chemical | 2,341 | 2,239 | 2,131 | 2,209 | 2,182 | 2,312 | 2,392 | 2,605 | 2,751 |
| Civil | 4,048 | 4,365 | 4,507 | 4,524 | 4,780 | 4,617 | 4,798 | 4,932 | 4,860 |
| Electrical | 5,112 | 5,840 | 5,996 | 6,639 | 7,713 | 8,081 | 8,379 | 8,703 | 8,940 |
| Engineering science | 440 | 495 | 484 | 469 | 591 | 595 | 622 | 557 | 548 |
| Industrial | 1,626 | 1,372 | 1,471 | 1,623 | 1,801 | 2,064 | 2,115 | 2,290 | 2,386 |
| Mechanical | 3,500 | 4,003 | 4,107 | 4,017 | 4,575 | 4,649 | 5,126 | 4,850 | 5,058 |
| Metallurgical/materials | 1,181 | 1,174 | 1,209 | 1,286 | 1,506 | 1,594 | 1,643 | 1,816 | 1,845 |
| Mining | 122 | 155 | 141 | 135 | 192 | 196 | 219 | 185 | 195 |
| Nuclear | 473 | 461 | 412 | 430 | 445 | 450 | 461 | 484 | 503 |
| Petroleum | 260 | 290 | 287 | 250 | 267 | 318 | 362 | 299 | 329 |
| Engineering, n.e.c. | 1,201 | 1,189 | 1,274 | 1,291 | 1,544 | 1,593 | 1,567 | 1,642 | 1,775 |
| Sciences, total | 33,915 | 36,908 | 38,079 | 41,749 | 45,552 | 48,176 | 51,185 | 53,357 | 55,925 |
| Physical sciences | 6,485 | 7,232 | 7,602 | 8,483 | 9,498 | 10,028 | 10,484 | 11,130 | 11,675 |
| Astronomy | 102 | 105 | 117 | 150 | 160 | 172 | 160 | 158 | 187 |
| Chemistry | 3,216 | 3,525 | 3,635 | 4,095 | 4,513 | 4,940 | 5,324 | 5,715 | 6,088 |
| Physics | 3,157 | 3,584 | 3,828 | 4,215 | 4,800 | 4,894 | 4,964 | 5,225 | 5,351 |
| Physical sciences, n.e.c. | 10 | 18 | 22 | 23 | 25 | 22 | 36 | 32 | 49 |
| Earth, atmospheric, and ocean sciences | 1,647 | 1,691 | 1,595 | 1,691 | 1,891 | 1,968 | 2,180 | 2,325 | 2,468 |
| Atmospheric sciences | 187 | 182 | 164 | 196 | 206 | 219 | 231 | 235 | 264 |
| Geosciences | 913 | 923 | 899 | 945 | 1,019 | 1,101 | 1,195 | 1,279 | 1,396 |
| Oceanography | 340 | 377 | 297 | 312 | 390 | 356 | 437 | 522 | 519 |
| Earth, atmos., and ocean sci., n.e.c. | 207 | 209 | 235 | 238 | 276 | 292 | 317 | 289 | 289 |
| Mathematical sciences | 3,888 | 4,242 | 4,538 | 4,824 | 5,145 | 5,494 | 5,774 | 5,988 | 5,794 |
| Computer sciences | 3,190 | 3,963 | 4,535 | 5,550 | 6,134 | 6,485 | 6,820 | 7,067 | 7,940 |
| Agricultural sciences | 2,383 | 2,468 | 2,421 | 2,338 | 2,544 | 2,617 | 2,610 | 2,567 | 2,674 |
| Biological sciences | 5,039 | 5,533 | 5,820 | 6,372 | 7,235 | 8,098 | 9,103 | 10,146 | 10,835 |
| Anatomy | 88 | 74 | 58 | 91 | 121 | 153 | 180 | 215 | 209 |
| Biochemistry | 658 | 775 | 847 | 976 | 1,098 | 1,217 | 1,335 | 1,526 | 1,623 |
| Biology | 851 | 961 | 1,105 | 1,094 | 1,252 | 1,374 | 1,529 | 1,714 | 1,813 |
| Biometry/epidemiology | 150 | 157 | 123 | 173 | 223 | 271 | 305 | 310 | 348 |
| Biophysics | 70 | 80 | 80 | 93 | 120 | 125 | 179 | 208 | 198 |
| Botany | 595 | 612 | 619 | 627 | 757 | 777 | 897 | 890 | 902 |
| Cell biology | 103 | 128 | 147 | 189 | 275 | 333 | 405 | 477 | 542 |
| Ecology | 80 | 78 | 87 | 100 | 100 | 110 | 123 | 134 | 185 |
| Entomology/parasitology | 227 | 240 | 224 | 234 | 252 | 295 | 286 | 291 | 301 |
| Genetics | 116 | 145 | 136 | 166 | 205 | 244 | 264 | 300 | 293 |
| Microbiology | 435 | 512 | 545 | 653 | 725 | 809 | 952 | 1,070 | 1,136 |
| Nutrition | 841 | 821 | 891 | 925 | 905 | 967 | 974 | 998 | 1,063 |
| Pathology | 174 | 206 | 169 | 189 | 204 | 251 | 250 | 295 | 299 |
| Pharmacology | 243 | 245 | 252 | 264 | 333 | 396 | 459 | 528 | 587 |
| Physiology | 188 | 212 | 255 | 265 | 318 | 350 | 447 | 550 | 581 |
| Zoology | 131 | 142 | 144 | 178 | 188 | 223 | 261 | 269 | 285 |
| Biosciences, n.e.c. | 91 | 145 | 138 | 155 | 159 | 203 | 257 | 371 | 470 |
| Psychology | 1,079 | 1,094 | 1,045 | 1,161 | 1,170 | 1,215 | 1,331 | 1,361 | 1,498 |
| Social sciences | 10,206 | 10,685 | 10,523 | 11,330 | 11,935 | 12,271 | 12,883 | 12,773 | 13,061 |
| Agricultural economics | 702 | 765 | 764 | 768 | 729 | 737 | 870 | 916 | 930 |
| Anthropology | 386 | 402 | 386 | 445 | 536 | 582 | 651 | 655 | 688 |
| Economics (except agricultural) | 3,554 | 3,548 | 3,575 | 4,000 | 4,093 | 4,244 | 4,480 | 4,513 | 4,627 |
| Geography | 391 | 386 | 372 | 360 | 384 | 425 | 407 | 426 | 438 |
| History and philosophy of science | 35 | 40 | 42 | 51 | 39 | 41 | 45 | 45 | 44 |
| Linguistics | 710 | 850 | 838 | 943 | 961 | 952 | 994 | 1,012 | 1,066 |
| Political science | 2,515 | 2,740 | 2,560 | 2,602 | 2,948 | 2,903 | 2,965 | 2,681 | 2,712 |
| Sociology | 985 | 1,101 | 1,069 | 1,205 | 1,243 | 1,335 | 1,423 | 1,377 | 1,365 |
| Sociology/anthropology | 134 | 129 | 122 | 128 | 126 | 126 | 124 | 134 | 163 |
| Social sciences, n.e.c. | 792 | 724 | 795 | 828 | 848 | 926 | 924 | 1,014 | 1,028 |
| Total, health fields | 2,301 | 2,408 | 2,343 | 2,542 | 2,701 | 2,761 | 3,078 | 3,276 | 3,549 |
| Dentistry | 129 | 122 | 130 | 155 | 179 | 145 | 156 | 170 | 182 |
| Neurology | 14 | 27 | 29 | 34 | 48 | 69 | 97 | 102 | 134 |
| Nursing | 202 | 159 | 172 | 166 | 160 | 163 | 183 | 170 | 197 |
| Pharmaceutical sciences | 587 | 619 | 630 | 633 | 681 | 676 | 797 | 893 | 934 |
| Preventive medicine/community health | 695 | 718 | 662 | 799 | 810 | 824 | 872 | 875 | 975 |
| Speech pathology/audiology | 205 | 242 | 208 | 222 | 251 | 231 | 267 | 276 | 298 |
| Veterinary sciences | 93 | 111 | 110 | 133 | 138 | 153 | 161 | 189 | 201 |
| Clinical medicine, n.e.c. | 149 | 168 | 118 | 189 | 197 | 212 | 232 | 245 | 270 |
| Health related, n.e.c. | 227 | 242 | 284 | 211 | 237 | 288 | 313 | 356 | 358 |

1/ Includes estimated data for master's-granting institutions, were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 14. Part-time science and engineering graduate students in all institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 1/ | 1985 1/ | 1986 1/ | 1987 1/ | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 138,826 | 140,313 | 142,581 | 148,475 | 150,917 | 152,060 | 151,789 | 153,952 | 163,107 |
| Total, science/engineering fields | 117,937 | 118,977 | 119,845 | 125,129 | 126,063 | 126,980 | 125,631 | 126,636 | 133,948 |
| Engineering, total | 34,348 | 37,616 | 38,116 | 40,668 | 42,363 | 42,477 | 40,319 | 40,099 | 42,752 |
| Aerospace | 419 | 568 | 591 | 664 | 770 | 749 | 785 | 787 | 996 |
| Agricultural | 136 | 203 | 181 | 176 | 173 | 139 | 160 | 180 | 146 |
| Biomedical | 185 | 213 | 224 | 244 | 255 | 297 | 300 | 308 | 332 |
| Chemical | 1,581 | 1,694 | 1,639 | 1,604 | 1,418 | 1,437 | 1,259 | 1,178 | 1,281 |
| Civil | 4,748 | 5,114 | 5,114 | 5,156 | 5,005 | 5,067 | 4,865 | 4,945 | 5,446 |
| Electrical | 10,484 | 12,010 | 12,449 | 13,376 | 13,686 | 14,299 | 14,307 | 14,765 | 15,177 |
| Engineering science | 853 | 905 | 881 | 834 | 917 | 973 | 974 | 818 | 1,215 |
| Industrial | 6,039 | 6,287 | 6,382 | 7,548 | 8,234 | 8,435 | 7,450 | 6,799 | 6,850 |
| Mechanical | 4,200 | 4,581 | 5,157 | 5,282 | 5,939 | 6,129 | 5,795 | 5,790 | 6,036 |
| Metallurgical/materials | 646 | 743 | 785 | 850 | 823 | 912 | 851 | 859 | 974 |
| Mining | 76 | 96 | 78 | 98 | 70 | 78 | 74 | 80 | 103 |
| Nuclear | 259 | 151 | 216 | 190 | 206 | 235 | 198 | 211 | 198 |
| Petroleum | 110 | 117 | 130 | 203 | 175 | 174 | 143 | 159 | 186 |
| Engineering, n.e.c. | 4,612 | 4,934 | 4,289 | 4,443 | 4,692 | 3,553 | 3,158 | 3,220 | 3,812 |
| Sciences, total | 83,589 | 81,361 | 81,729 | 84,461 | 83,700 | 84,503 | 85,312 | 86,537 | 91,196 |
| Physical sciences | 4,159 | 4,261 | 4,212 | 4,326 | 4,496 | 4,324 | 4,398 | 4,435 | 4,764 |
| Astronomy | 42 | 33 | 43 | 36 | 35 | 41 | 26 | 27 | 21 |
| Chemistry | 2,728 | 2,778 | 2,633 | 2,729 | 2,748 | 2,589 | 2,490 | 2,560 | 2,752 |
| Physics | 1,234 | 1,316 | 1,371 | 1,390 | 1,486 | 1,506 | 1,674 | 1,620 | 1,763 |
| Physical sciences, n.e.c. | 155 | 134 | 165 | 171 | 227 | 188 | 208 | 228 | 228 |
| Earth, atmospheric, and ocean sciences | 3,738 | 3,495 | 3,793 | 4,106 | 3,840 | 3,979 | 3,736 | 3,710 | 3,864 |
| Atmospheric sciences | 110 | 111 | 131 | 92 | 106 | 128 | 111 | 102 | 101 |
| Geosciences | 2,100 | 2,118 | 2,277 | 2,591 | 2,435 | 2,332 | 2,181 | 2,096 | 1,934 |
| Oceanography | 498 | 451 | 503 | 519 | 434 | 476 | 404 | 408 | 399 |
| Earth, atmos., and ocean sci., n.e.c. | 1,030 | 815 | 882 | 904 | 865 | 1,043 | 1,040 | 1,104 | 1,430 |
| Mathematical sciences | 6,376 | 6,433 | 6,159 | 5,780 | 5,592 | 5,524 | 5,618 | 5,677 | 6,014 |
| Computer sciences | 10,641 | 12,929 | 14,223 | 15,743 | 16,115 | 16,565 | 17,191 | 16,838 | 17,635 |
| Agricultural sciences | 2,423 | 2,454 | 2,312 | 2,283 | 2,100 | 2,021 | 2,014 | 2,112 | 2,222 |
| Biological sciences | 9,321 | 8,943 | 8,691 | 9,176 | 9,038 | 8,663 | 8,544 | 8,633 | 9,236 |
| Anatomy | 137 | 116 | 93 | 102 | 80 | 87 | 83 | 79 | 89 |
| Biochemistry | 274 | 227 | 227 | 203 | 245 | 209 | 190 | 272 | 217 |
| Biology | 4,353 | 4,061 | 3,934 | 4,201 | 4,130 | 3,823 | 3,719 | 3,625 | 3,918 |
| Biometry/epidemiology | 247 | 279 | 253 | 364 | 386 | 420 | 499 | 541 | 702 |
| Biophysics | 17 | 13 | 14 | 60 | 98 | 123 | 48 | 45 | 37 |
| Botany | 475 | 407 | 411 | 499 | 407 | 428 | 398 | 413 | 413 |
| Cell biology | 33 | 44 | 47 | 23 | 61 | 78 | 55 | 57 | 77 |
| Ecology | 141 | 163 | 211 | 152 | 155 | 167 | 192 | 230 | 287 |
| Entomology/parasitology | 200 | 170 | 174 | 204 | 199 | 182 | 179 | 172 | 179 |
| Genetics | 66 | 71 | 73 | 63 | 91 | 106 | 102 | 82 | 91 |
| Microbiology | 613 | 558 | 500 | 568 | 503 | 438 | 465 | 498 | 509 |
| Nutrition | 1,239 | 1,363 | 1,259 | 1,274 | 1,266 | 1,274 | 1,352 | 1,385 | 1,339 |
| Pathology | 439 | 394 | 385 | 319 | 328 | 307 | 274 | 268 | 280 |
| Pharmacology | 144 | 136 | 124 | 117 | 123 | 150 | 140 | 132 | 144 |
| Physiology | 253 | 228 | 191 | 225 | 215 | 217 | 212 | 149 | 160 |
| Zoology | 367 | 378 | 440 | 417 | 363 | 326 | 315 | 315 | 427 |
| Biosciences, n.e.c. | 323 | 335 | 355 | 385 | 388 | 328 | 321 | 370 | 367 |
| Psychology | 14,270 | 14,338 | 14,966 | 15,539 | 15,030 | 15,391 | 15,909 | 16,132 | 17,667 |
| Social sciences | 32,661 | 28,508 | 27,373 | 27,508 | 27,489 | 28,036 | 27,902 | 29,000 | 29,796 |
| Agricultural economics | 289 | 248 | 232 | 278 | 284 | 346 | 350 | 364 | 312 |
| Anthropology | 1,843 | 1,704 | 1,622 | 1,715 | 1,744 | 1,727 | 1,669 | 1,717 | 1,753 |
| Economics (except agricultural) | 4,256 | 3,947 | 3,775 | 3,527 | 3,181 | 3,106 | 3,080 | 3,142 | 3,086 |
| Geography | 1,027 | 858 | 860 | 812 | 947 | 933 | 993 | 1,153 | 1,189 |
| History and philosophy of science | 33 | 24 | 31 | 45 | 29 | 27 | 22 | 39 | 30 |
| Linguistics | 646 | 647 | 861 | 718 | 751 | 833 | 735 | 887 | 947 |
| Political science | 16,194 | 14,607 | 13,123 | 13,841 | 13,841 | 14,601 | 14,484 | 15,015 | 15,226 |
| Sociology | 2,371 | 2,126 | 1,995 | 1,923 | 1,909 | 1,919 | 1,963 | 2,089 | 2,077 |
| Sociology/anthropology | 476 | 529 | 469 | 469 | 437 | 422 | 425 | 389 | 430 |
| Social sciences, n.e.c. | 5,526 | 3,818 | 4,405 | 4,180 | 4,366 | 4,122 | 4,181 | 4,205 | 4,744 |
| Total, health fields | 20,889 | 21,336 | 22,736 | 23,346 | 24,854 | 25,080 | 26,158 | 27,316 | 29,159 |
| Dentistry | 109 | 75 | 82 | 90 | 113 | 148 | 155 | 148 | 129 |
| Neurology | 2 | 3 | 4 | 2 | 10 | 19 | 10 | 21 | 22 |
| Nursing | 9,642 | 10,761 | 11,874 | 11,917 | 12,546 | 12,555 | 12,963 | 13,825 | 15,194 |
| Pharmaceutical sciences | 816 | 873 | 748 | 761 | 840 | 783 | 706 | 800 | 826 |
| Preventive medicine/community health | 2,760 | 2,718 | 2,886 | 3,155 | 3,147 | 3,398 | 3,454 | 3,474 | 3,761 |
| Speech pathology/audiology | 3,239 | 2,565 | 2,485 | 2,540 | 2,564 | 2,403 | 2,423 | 2,455 | 2,768 |
| Veterinary sciences | 93 | 103 | 132 | 122 | 124 | 139 | 146 | 133 | 191 |
| Clinical medicine, n.e.c. | 662 | 554 | 535 | 567 | 551 | 570 | 578 | 438 | 408 |
| Health related, n.e.c. | 3,566 | 3,684 | 3,993 | 4,192 | 4,959 | 5,065 | 5,723 | 6,022 | 5,860 |

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 15. Science and engineering graduate students in doctorate-granting institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 336,080 | 342,956 | 346,264 | 355,875 | 366,927 | 372,101 | 377,360 | 384,014 | 398,405 |
| Total, science/engineering fields | 298,786 | 305,698 | 307,550 | 316,297 | 325,800 | 330,587 | 334,121 | 338,566 | 350,013 |
| Engineering, total | 78,180 | 85,309 | 87,100 | 90,222 | 95,772 | 96,969 | 96,683 | 96,878 | 100,253 |
| Aerospace | 1,933 | 2,376 | 2,413 | 2,626 | 2,891 | 3,086 | 3,281 | 3,492 | 3,915 |
| Agricultural | 875 | 969 | 954 | 941 | 1,054 | 1,063 | 1,039 | 1,031 | 939 |
| Biomedical | 1,064 | 1,185 | 1,288 | 1,317 | 1,481 | 1,613 | 1,676 | 1,853 | 2,067 |
| Chemical | 6,929 | 7,352 | 7,196 | 7,015 | 6,891 | 6,990 | 6,532 | 6,361 | 6,618 |
| Civil | 13,533 | 14,416 | 14,737 | 14,421 | 14,472 | 13,831 | 14,096 | 14,136 | 14,773 |
| Electrical | 20,582 | 23,545 | 24,599 | 26,375 | 27,940 | 29,028 | 29,778 | 30,213 | 30,453 |
| Engineering science | 1,840 | 1,981 | 1,900 | 1,838 | 2,128 | 2,127 | 2,189 | 2,058 | 2,529 |
| Industrial | 9,008 | 8,792 | 8,940 | 10,084 | 11,068 | 11,687 | 10,819 | 10,326 | 10,288 |
| Mechanical | 10,767 | 12,089 | 12,966 | 13,246 | 14,607 | 15,090 | 15,050 | 14,937 | 15,511 |
| Metallurgical/materials | 3,030 | 3,338 | 3,572 | 3,818 | 4,039 | 4,187 | 4,164 | 4,424 | 4,684 |
| Mining | 424 | 498 | 477 | 463 | 487 | 484 | 450 | 386 | 409 |
| Nuclear | 1,301 | 1,203 | 1,234 | 1,220 | 1,265 | 1,279 | 1,303 | 1,323 | 1,278 |
| Petroleum | 580 | 724 | 732 | 752 | 726 | 790 | 711 | 651 | 656 |
| Engineering, n.e.c. | 6,314 | 6,841 | 6,092 | 6,106 | 6,723 | 5,714 | 5,595 | 5,687 | 6,133 |
| Sciences, total | 220,606 | 220,389 | 220,450 | 226,075 | 230,028 | 233,618 | 237,438 | 241,688 | 249,760 |
| Physical sciences | 26,511 | 27,747 | 28,410 | 29,312 | 30,543 | 30,967 | 31,212 | 31,807 | 32,504 |
| Astronomy | 632 | 618 | 639 | 671 | 689 | 722 | 731 | 789 | 811 |
| Chemistry | 15,793 | 16,548 | 16,599 | 17,152 | 17,602 | 17,667 | 17,482 | 17,713 | 18,059 |
| Physics | 10,015 | 10,512 | 10,985 | 11,297 | 12,014 | 12,330 | 12,787 | 13,116 | 13,392 |
| Physical sciences, n.e.c. | 71 | 69 | 187 | 192 | 238 | 248 | 212 | 189 | 242 |
| Earth, atmospheric, and ocean sciences | 13,804 | 14,281 | 14,286 | 14,217 | 13,989 | 13,368 | 12,871 | 12,677 | 12,866 |
| Atmospheric sciences | 877 | 884 | 895 | 951 | 956 | 948 | 929 | 900 | 925 |
| Geosciences | 9,048 | 9,688 | 9,716 | 9,533 | 9,176 | 8,385 | 7,904 | 7,576 | 7,199 |
| Oceanography | 1,934 | 1,907 | 1,929 | 1,984 | 2,027 | 2,022 | 1,926 | 2,070 | 2,117 |
| Earth, atmos., and ocean sci., n.e.c. | 1,945 | 1,802 | 1,746 | 1,749 | 1,830 | 2,013 | 2,112 | 2,131 | 2,625 |
| Mathematical sciences | 14,770 | 14,885 | 15,067 | 15,268 | 15,663 | 16,192 | 16,892 | 16,905 | 17,297 |
| Computer sciences | 15,583 | 18,306 | 20,366 | 23,823 | 25,204 | 26,083 | 26,742 | 26,520 | 27,667 |
| Agricultural sciences | 11,596 | 11,538 | 11,327 | 10,680 | 10,675 | 10,339 | 10,302 | 10,355 | 10,445 |
| Biological sciences | 41,916 | 41,609 | 41,963 | 42,490 | 43,369 | 43,699 | 44,695 | 45,814 | 47,054 |
| Anatomy | 1,074 | 1,037 | 1,029 | 993 | 973 | 1,016 | 1,056 | 1,078 | 1,011 |
| Biochemistry | 4,090 | 4,194 | 4,460 | 4,657 | 4,876 | 4,803 | 4,926 | 5,118 | 5,119 |
| Biology | 9,888 | 9,551 | 9,536 | 9,551 | 9,768 | 9,624 | 9,792 | 10,071 | 10,285 |
| Biometry/epidemiology | 1,166 | 1,156 | 1,004 | 1,360 | 1,441 | 1,617 | 1,743 | 1,789 | 1,966 |
| Biophysics | 440 | 450 | 433 | 441 | 547 | 591 | 592 | 655 | 642 |
| Botany | 3,602 | 3,405 | 3,371 | 3,307 | 3,242 | 3,095 | 3,039 | 2,963 | 2,833 |
| Cell biology | 1,143 | 1,182 | 1,256 | 1,429 | 1,716 | 1,964 | 2,078 | 2,234 | 2,592 |
| Ecology | 1,018 | 962 | 1,034 | 978 | 956 | 899 | 963 | 1,037 | 1,083 |
| Entomology/parasitology | 1,540 | 1,475 | 1,438 | 1,342 | 1,306 | 1,244 | 1,240 | 1,181 | 1,194 |
| Genetics | 940 | 986 | 1,012 | 1,075 | 1,219 | 1,273 | 1,247 | 1,321 | 1,364 |
| Microbiology | 3,992 | 4,137 | 4,229 | 4,342 | 4,280 | 4,362 | 4,708 | 4,753 | 4,812 |
| Nutrition | 4,126 | 4,093 | 4,023 | 4,005 | 3,987 | 3,976 | 3,927 | 3,917 | 3,951 |
| Pathology | 1,413 | 1,419 | 1,424 | 1,308 | 1,333 | 1,386 | 1,343 | 1,362 | 1,357 |
| Pharmacology | 2,073 | 2,134 | 2,117 | 2,179 | 2,157 | 2,153 | 2,209 | 2,351 | 2,438 |
| Physiology | 2,058 | 1,994 | 2,160 | 2,211 | 2,220 | 2,213 | 2,220 | 2,206 | 2,276 |
| Zoology | 2,471 | 2,390 | 2,266 | 2,103 | 2,065 | 2,097 | 2,022 | 2,075 | 2,097 |
| Biosciences, n.e.c. | 884 | 1,044 | 1,171 | 1,209 | 1,283 | 1,386 | 1,590 | 1,703 | 2,034 |
| Psychology | 29,981 | 30,011 | 30,033 | 30,490 | 30,656 | 31,554 | 32,515 | 33,575 | 34,685 |
| Social sciences | 66,445 | 62,012 | 58,998 | 59,795 | 59,929 | 61,416 | 62,209 | 64,035 | 67,242 |
| Agricultural economics | 2,223 | 2,237 | 2,212 | 2,200 | 2,184 | 2,152 | 2,209 | 2,227 | 2,232 |
| Anthropology | 5,688 | 5,399 | 5,371 | 5,398 | 5,582 | 5,598 | 5,700 | 5,916 | 6,244 |
| Economics (except agricultural) | 12,652 | 12,015 | 11,512 | 11,391 | 11,238 | 11,239 | 11,319 | 11,429 | 11,668 |
| Geography | 2,718 | 2,640 | 2,604 | 2,542 | 2,591 | 2,702 | 2,638 | 2,849 | 2,938 |
| History and philosophy of science | 254 | 253 | 274 | 272 | 266 | 294 | 288 | 342 | 370 |
| Linguistics | 2,676 | 2,813 | 2,920 | 2,804 | 2,819 | 2,920 | 2,881 | 2,919 | 3,049 |
| Political science | 23,835 | 22,477 | 20,340 | 21,435 | 21,809 | 22,438 | 22,403 | 23,146 | 24,416 |
| Sociology | 6,670 | 6,376 | 6,122 | 6,002 | 5,901 | 6,330 | 6,439 | 6,664 | 6,940 |
| Sociology/anthropology | 1,042 | 1,014 | 960 | 906 | 904 | 882 | 912 | 946 | 1,123 |
| Social sciences, n.e.c. | 8,687 | 6,788 | 6,683 | 6,845 | 6,635 | 6,861 | 7,420 | 7,597 | 8,262 |
| Total, health fields | 37,294 | 37,258 | 38,714 | 39,578 | 41,127 | 41,516 | 43,239 | 45,448 | 48,392 |
| Dentistry | 836 | 776 | 850 | 835 | 938 | 1,057 | 1,085 | 1,007 | 969 |
| Neurology | 190 | 247 | 303 | 326 | 373 | 472 | 586 | 697 | 790 |
| Nursing | 14,361 | 14,986 | 15,913 | 15,732 | 16,194 | 16,033 | 16,292 | 16,912 | 18,242 |
| Pharmaceutical sciences | 2,508 | 2,554 | 2,428 | 2,459 | 2,593 | 2,527 | 2,531 | 2,828 | 2,961 |
| Preventive medicine/community health | 6,676 | 6,492 | 6,657 | 7,106 | 7,039 | 7,359 | 7,529 | 7,541 | 8,073 |
| Speech pathology/audiology | 6,727 | 5,866 | 5,804 | 6,014 | 6,032 | 5,532 | 5,927 | 6,163 | 6,441 |
| Veterinary sciences | 446 | 440 | 531 | 610 | 607 | 711 | 735 | 782 | 881 |
| Clinical medicine, n.e.c. | 1,312 | 1,300 | 1,308 | 1,498 | 1,448 | 1,542 | 1,622 | 1,603 | 1,673 |
| Health related, n.e.c. | 4,238 | 4,597 | 4,920 | 5,000 | 5,903 | 6,283 | 6,932 | 7,915 | 8,362 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 16. Science and engineering graduate students in doctorate-granting institutions by geographic distribution: 1982-90

| Geographic distribution | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all institutions ..... | 336,080 | 342,956 | 346,264 | 355,875 | 366,927 | 372,101 | 377,360 | 384,014 | 398,405 |
| New England ..................... | 25,676 | 26,551 | 26,560 | 27,437 | 28,204 | 28,142 | 28,986 | 28,439 | 29,848 |
| Connecticut ..................... | 3,663 | 3,772 | 3,648 | 3,930 | 4,121 | 4,317 | 4,341 | 4,336 | 4,565 |
| Maine ........................... | 416 | 509 | 580 | 523 | 538 | 614 | 649 | 667 | 689 |
| Massachusetts ................... | 18,441 | 18,991 | 19,034 | 19,654 | 20,044 | 19,650 | 20,355 | 19,769 | 20,868 |
| New Hampshire ................... | 782 | 794 | 803 | 829 | 878 | 882 | 973 | 986 | 1,022 |
| Rhode Island .................... | 1,739 | 1,851 | 1,834 | 1,883 | 1,993 | 2,074 | 2,018 | 2,063 | 2,079 |
| Vermont ......................... | 635 | 634 | 661 | 618 | 630 | 605 | 650 | 618 | 625 |
| Middle Atlantic ................. | 62,825 | 64,314 | 65,496 | 66,502 | 68,397 | 68,087 | 68,574 | 68,645 | 70,150 |
| New Jersey ...................... | 9,069 | 9,153 | 10,021 | 10,474 | 10,395 | 10,871 | 11,198 | 10,911 | 10,674 |
| New York ........................ | 37,549 | 38,333 | 38,710 | 38,984 | 40,447 | 39,783 | 39,748 | 39,739 | 40,764 |
| Pennsylvania .................... | 16,207 | 16,828 | 16,765 | 17,044 | 17,555 | 17,433 | 17,628 | 17,995 | 18,712 |
| East North Central .............. | 60,013 | 62,050 | 61,265 | 62,088 | 64,737 | 67,322 | 68,811 | 70,793 | 73,564 |
| Illinois ........................ | 15,828 | 16,344 | 16,547 | 17,263 | 17,840 | 18,664 | 18,982 | 19,475 | 20,109 |
| Indiana ......................... | 7,892 | 8,143 | 7,439 | 6,913 | 7,670 | 8,037 | 8,102 | 8,954 | 9,355 |
| Michigan ........................ | 12,151 | 12,547 | 12,643 | 12,806 | 13,519 | 13,813 | 13,836 | 14,634 | 15,204 |
| Ohio ............................ | 16,638 | 17,392 | 16,921 | 17,484 | 18,017 | 18,940 | 19,927 | 19,552 | 20,497 |
| Wisconsin ....................... | 7,504 | 7,624 | 7,715 | 7,622 | 7,691 | 7,868 | 7,964 | 8,178 | 8,399 |
| West North Central .............. | 23,027 | 23,785 | 23,666 | 24,224 | 24,752 | 24,995 | 25,460 | 25,834 | 26,844 |
| Iowa ............................ | 4,367 | 4,627 | 4,517 | 4,651 | 4,810 | 4,818 | 5,005 | 4,971 | 5,303 |
| Kansas .......................... | 4,141 | 4,427 | 4,367 | 4,225 | 4,230 | 4,387 | 4,501 | 4,605 | 4,761 |
| Minnesota ....................... | 5,081 | 5,127 | 5,255 | 5,641 | 5,570 | 5,373 | 5,534 | 5,681 | 5,708 |
| Missouri ........................ | 5,643 | 5,655 | 5,680 | 5,811 | 6,224 | 6,408 | 6,296 | 6,386 | 6,729 |
| Nebraska ........................ | 2,133 | 2,214 | 2,165 | 2,139 | 2,130 | 2,238 | 2,326 | 2,329 | 2,462 |
| North Dakota .................... | 930 | 946 | 906 | 949 | 970 | 915 | 947 | 947 | 886 |
| South Dakota .................... | 732 | 789 | 776 | 808 | 818 | 856 | 851 | 915 | 995 |
| South Atlantic .................. | 50,203 | 47,984 | 49,874 | 52,224 | 54,872 | 56,745 | 58,212 | 59,695 | 62,803 |
| Delaware ........................ | 1,173 | 1,180 | 1,112 | 1,150 | 1,189 | 1,303 | 1,198 | 1,239 | 1,357 |
| District of Columbia ............ | 8,233 | 7,703 | 8,120 | 8,531 | 9,110 | 9,204 | 8,726 | 8,219 | 8,409 |
| Florida ......................... | 10,555 | 8,953 | 9,067 | 9,961 | 10,019 | 10,844 | 11,877 | 12,428 | 13,142 |
| Georgia ......................... | 5,659 | 5,683 | 6,290 | 6,005 | 6,386 | 6,726 | 6,749 | 6,902 | 7,375 |
| Maryland ........................ | 5,472 | 5,880 | 5,961 | 6,185 | 6,525 | 6,503 | 7,144 | 7,498 | 7,770 |
| North Carolina .................. | 6,928 | 7,152 | 7,238 | 7,234 | 7,720 | 7,799 | 7,977 | 8,411 | 8,611 |
| South Carolina .................. | 2,769 | 2,864 | 2,925 | 2,931 | 3,251 | 3,313 | 3,192 | 3,417 | 3,542 |
| Virginia ........................ | 6,770 | 6,901 | 7,508 | 8,612 | 9,097 | 9,567 | 9,761 | 9,969 | 10,838 |
| West Virginia ................... | 2,644 | 1,668 | 1,653 | 1,615 | 1,575 | 1,486 | 1,588 | 1,612 | 1,759 |
| East South Central .............. | 12,110 | 12,401 | 12,941 | 13,373 | 13,938 | 14,349 | 15,101 | 16,158 | 16,646 |
| Alabama ......................... | 2,979 | 3,042 | 3,382 | 3,759 | 4,089 | 4,472 | 4,710 | 5,127 | 5,598 |
| Kentucky ........................ | 2,753 | 2,774 | 2,837 | 2,745 | 2,751 | 2,894 | 3,057 | 3,182 | 3,170 |
| Mississippi ..................... | 1,882 | 2,001 | 2,200 | 2,172 | 2,250 | 2,255 | 2,389 | 2,501 | 2,429 |
| Tennessee ....................... | 4,496 | 4,584 | 4,522 | 4,697 | 4,848 | 4,728 | 4,945 | 5,348 | 5,449 |
| West South Central .............. | 29,483 | 31,930 | 32,522 | 32,549 | 33,157 | 32,800 | 33,058 | 34,682 | 36,530 |
| Arkansas ........................ | 1,224 | 1,172 | 1,182 | 1,181 | 1,161 | 1,180 | 1,053 | 1,029 | 1,106 |
| Louisiana ....................... | 4,022 | 4,344 | 4,564 | 4,553 | 4,391 | 4,344 | 4,241 | 4,348 | 4,622 |
| Oklahoma ........................ | 3,507 | 3,849 | 3,813 | 3,924 | 4,027 | 4,291 | 4,090 | 4,250 | 4,455 |
| Texas ........................... | 20,730 | 22,565 | 22,963 | 22,891 | 23,578 | 22,985 | 23,674 | 25,055 | 26,347 |
| Mountain ........................ | 22,093 | 22,282 | 22,125 | 23,129 | 23,934 | 24,648 | 24,734 | 25,069 | 26,474 |
| Arizona ......................... | 6,140 | 6,147 | 6,212 | 6,743 | 6,834 | 6,938 | 7,254 | 7,443 | 7,552 |
| Colorado ........................ | 6,690 | 6,411 | 6,150 | 6,468 | 7,108 | 7,440 | 7,341 | 7,313 | 8,067 |
| Idaho ........................... | 937 | 1,004 | 1,008 | 1,041 | 1,035 | 1,173 | 1,225 | 1,405 | 1,560 |
| Montana ......................... | 976 | 1,019 | 1,030 | 980 | 911 | 891 | 961 | 971 | 993 |
| Nevada .......................... | 413 | 532 | 561 | 547 | 505 | 609 | 646 | 749 | 872 |
| New Mexico ...................... | 2,372 | 2,551 | 2,464 | 2,551 | 2,647 | 2,815 | 2,760 | 2,624 | 2,789 |
| Utah ............................ | 3,763 | 3,783 | 3,921 | 3,986 | 4,154 | 4,043 | 3,850 | 3,762 | 3,790 |
| Wyoming ......................... | 802 | 835 | 779 | 813 | 740 | 739 | 697 | 802 | 851 |
| Pacific ......................... | 48,650 | 49,399 | 49,379 | 51,797 | 52,416 | 52,715 | 52,127 | 52,341 | 53,007 |
| Alaska .......................... | 355 | 426 | 352 | 381 | 399 | 387 | 404 | 444 | 487 |
| California ...................... | 38,242 | 38,827 | 38,515 | 40,775 | 41,055 | 41,556 | 40,783 | 41,128 | 41,150 |
| Hawaii .......................... | 1,828 | 1,782 | 1,702 | 1,705 | 1,820 | 1,822 | 1,829 | 1,857 | 1,984 |
| Oregon .......................... | 2,981 | 3,093 | 3,234 | 3,262 | 3,629 | 3,454 | 3,580 | 3,549 | 3,780 |
| Washington ...................... | 5,244 | 5,271 | 5,576 | 5,674 | 5,513 | 5,496 | 5,531 | 5,363 | 5,606 |
| Outlying areas .................. | 2,000 | 2,260 | 2,436 | 2,552 | 2,520 | 2,298 | 2,297 | 2,358 | 2,539 |

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 17. Full-time science and engineering graduate students in doctorate-granting institutions by field: 1982-90

| Field | 1982 | 1983 | 1994 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 229,860 | 235,957 | 237,293 | 241,458 | 250,251 | 254,556 | 259,596 | 266,937 | 275,262 |
| Total, science/engineering fields | 208,954 | 215,499 | 216,585 | 220,309 | 229,068 | 232,887 | 237,062 | 243,062 | 250,013 |
| Engineering, total | 48,692 | 52,684 | 53,963 | 54,807 | 59,013 | 60,325 | 61,479 | 62,533 | 64,169 |
| Aerospace | 1,519 | 1,825 | 1,840 | 1,980 | 2,138 | 2,355 | 2,517 | 2,742 | 2,946 |
| Agricultural | 739 | 766 | 773 | 767 | 881 | 924 | 879 | 851 | 793 |
| Biomedical | 908 | 1,012 | 1,106 | 1,117 | 1,280 | 1,352 | 1,402 | 1,572 | 1,761 |
| Chemical | 5,524 | 5,790 | 5,656 | 5,494 | 5,542 | 5,632 | 5,330 | 5,245 | 5,420 |
| Civil | 9,432 | 9,911 | 10,219 | 9,850 | 10,074 | 9,586 | 9,829 | 9,852 | 10,164 |
| Electrical | 11,277 | 12,854 | 13,461 | 14,358 | 15,832 | 16,457 | 17,012 | 17,597 | 17,879 |
| Engineering science | 1,252 | 1,339 | 1,256 | 1,246 | 1,427 | 1,369 | 1,421 | 1,249 | 1,321 |
| Industrial | 3,590 | 3,142 | 3,276 | 3,355 | 3,715 | 4,067 | 4,177 | 4,491 | 4,543 |
| Mechanical | 7,128 | 8,178 | 8,511 | 8,683 | 9,599 | 9,966 | 10,198 | 10,147 | 10,505 |
| Metallurgical/materials | 2,453 | 2,686 | 2,863 | 3,070 | 3,317 | 3,370 | 3,398 | 3,657 | 3,824 |
| Mining | 351 | 404 | 403 | 371 | 419 | 406 | 379 | 312 | 306 |
| Nuclear | 1,042 | 1,052 | 1,018 | 1,030 | 1,059 | 1,044 | 1,105 | 1,112 | 1,080 |
| Petroleum | 470 | 607 | 602 | 551 | 551 | 619 | 570 | 494 | 475 |
| Engineering, n.e.c. | 3,007 | 3,118 | 2,979 | 2,935 | 3,179 | 3,178 | 3,262 | 3,212 | 3,152 |
| Sciences, total | 160,262 | 162,815 | 162,622 | 165,502 | 170,055 | 172,562 | 175,583 | 180,529 | 185,844 |
| Physical sciences | 23,339 | 24,502 | 25,147 | 25,938 | 27,069 | 27,652 | 27,778 | 28,429 | 28,845 |
| Astronomy | 590 | 585 | 596 | 635 | 654 | 681 | 705 | 762 | 790 |
| Chemistry | 13,755 | 14,495 | 14,615 | 15,067 | 15,537 | 15,735 | 15,582 | 15,810 | 15,988 |
| Physics | 8,941 | 9,361 | 9,800 | 10,103 | 10,753 | 11,078 | 11,373 | 11,761 | 11,931 |
| Physical sciences, n.e.c. | 53 | 61 | 136 | 133 | 125 | 158 | 118 | 96 | 136 |
| Earth, atmospheric, and ocean sciences | 10,918 | 11,497 | 11,266 | 10,871 | 10,862 | 10,097 | 9,837 | 9,715 | 9,848 |
| Atmospheric sciences | 771 | 778 | 770 | 867 | 854 | 822 | 825 | 803 | 828 |
| Geosciences | 7,285 | 7,908 | 7,797 | 7,350 | 7,110 | 6,411 | 6,060 | 5,788 | 5,574 |
| Oceanography | 1,551 | 1,547 | 1,518 | 1,520 | 1,652 | 1,603 | 1,576 | 1,745 | 1,798 |
| Earth, atmos., and ocean sci., n.e.c. | 1,311 | 1,264 | 1,181 | 1,134 | 1,246 | 1,261 | 1,376 | 1,379 | 1,648 |
| Mathematical sciences | 10,178 | 10,316 | 10,613 | 11,160 | 11,727 | 12,345 | 12,809 | 13,024 | 13,202 |
| Computer sciences | 7,911 | 9,276 | 10,108 | 12,374 | 13,389 | 13,639 | 13,701 | 14,070 | 14,701 |
| Agricultural sciences | 9,519 | 9,420 | 9,323 | 8,721 | 8,852 | 8,611 | 8,588 | 8,538 | 8,552 |
| Biological sciences | 35,248 | 35,234 | 35,688 | 35,696 | 36,609 | 37,236 | 38,259 | 39,443 | 40,132 |
| Anatomy | 937 | 921 | 936 | 891 | 893 | 929 | 973 | 999 | 922 |
| Biochemistry | 3,832 | 3,981 | 4,245 | 4,471 | 4,649 | 4,625 | 4,759 | 4,869 | 4,921 |
| Biology | 7,639 | 7,519 | 7,535 | 7,194 | 7,348 | 7,457 | 7,671 | 8,114 | 8,109 |
| Biometry/epidemiology | 919 | 877 | 751 | 996 | 1,055 | 1,197 | 1,244 | 1,248 | 1,264 |
| Biophysics | 423 | 437 | 419 | 381 | 449 | 468 | 544 | 610 | 605 |
| Botany | 3,143 | 3,013 | 2,969 | 2,814 | 2,844 | 2,672 | 2,649 | 2,555 | 2,428 |
| Cell biology | 1,110 | 1,138 | 1,209 | 1,406 | 1,655 | 1,886 | 2,023 | 2,177 | 2,515 |
| Ecology | 905 | 835 | 865 | 864 | 844 | 784 | 822 | 872 | 884 |
| Entomology/parasitology | 1,340 | 1,305 | 1,264 | 1,138 | 1,107 | 1,062 | 1,061 | 1,009 | 1,015 |
| Genetics | 877 | 919 | 942 | 1,014 | 1,129 | 1,167 | 1,146 | 1,240 | 1,275 |
| Microbiology | 3,499 | 3,680 | 3,803 | 3,867 | 3,853 | 4,000 | 4,296 | 4,310 | 4,351 |
| Nutrition | 3,033 | 2,882 | 2,873 | 2,916 | 2,928 | 2,892 | 2,738 | 2,737 | 2,813 |
| Pathology | 1,014 | 1,063 | 1,077 | 1,029 | 1,065 | 1,120 | 1,117 | 1,145 | 1,116 |
| Pharmacology | 1,939 | 2,002 | 1,997 | 2,064 | 2,036 | 2,004 | 2,070 | 2,221 | 2,294 |
| Physiology | 1,805 | 1,766 | 1,969 | 1,986 | 2,005 | 1,996 | 2,008 | 2,057 | 2,116 |
| Zoology | 2,118 | 2,025 | 1,844 | 1,699 | 1,708 | 1,775 | 1,708 | 1,766 | 1,677 |
| Biosciences, n.e.c. | 715 | 871 | 968 | 966 | 1,041 | 1,202 | 1,410 | 1,514 | 1,827 |
| Psychology | 21,894 | 22,150 | 21,600 | 21,334 | 21,995 | 22,629 | 23,376 | 24,661 | 24,930 |
| Social sciences | 41,255 | 40,420 | 38,877 | 39,408 | 39,552 | 40,353 | 41,235 | 42,649 | 45,634 |
| Agricultural economics | 1,958 | 1,994 | 1,973 | 1,944 | 1,915 | 1,823 | 1,878 | 1,885 | 1,934 |
| Anthropology | 4,027 | 3,866 | 3,900 | 3,795 | 3,996 | 4,027 | 4,189 | 4,336 | 4,658 |
| Economics (except agricultural) | 9,087 | 8,859 | 8,478 | 8,614 | 8,668 | 8,709 | 8,787 | 8,857 | 9,073 |
| Geography | 1,987 | 2,025 | 1,997 | 1,920 | 1,942 | 2,074 | 1,982 | 2,115 | 2,191 |
| History and philosophy of science | 223 | 229 | 243 | 227 | 237 | 267 | 266 | 303 | 340 |
| Linguistics | 2,165 | 2,316 | 2,264 | 2,303 | 2,307 | 2,388 | 2,438 | 2,389 | 2,536 |
| Political science | 12,159 | 11,848 | 11,060 | 11,548 | 11,824 | 11,628 | 11,979 | 12,600 | 13,830 |
| Sociology | 4,648 | 4,566 | 4,424 | 4,361 | 4,347 | 4,743 | 4,826 | 4,980 | 5,336 |
| Sociology/anthropology | 612 | 586 | 572 | 536 | 550 | 527 | 538 | 607 | 744 |
| Social sciences, n.e.c. | 4,411 | 4,101 | 3,964 | 4,130 | 3,766 | 4,167 | 4,352 | 4,577 | 4,992 |
| Total, health fields | 20,906 | 20,458 | 20,708 | 21,149 | 21,183 | 21,669 | 22,534 | 23,875 | 25,249 |
| Dentistry | 727 | 701 | 768 | 745 | 825 | 909 | 930 | 859 | 840 |
| Neurology | 188 | 244 | 299 | 322 | 370 | 470 | 583 | 682 | 778 |
| Nursing | 6,198 | 5,726 | 5,682 | 5,536 | 5,379 | 5,350 | 5,333 | 5,318 | 5,444 |
| Pharmaceutical sciences | 1,702 | 1,695 | 1,697 | 1,716 | 1,763 | 1,746 | 1,828 | 2,036 | 2,137 |
| Preventive medicine/community health | 4,029 | 3,926 | 3,915 | 4,090 | 4,032 | 4,112 | 4,173 | 4,171 | 4,442 |
| Speech pathology/audiology | 4,436 | 4,363 | 4,319 | 4,475 | 4,344 | 4,014 | 4,315 | 4,554 | 4,596 |
| Veterinary sciences | 356 | 337 | 402 | 491 | 486 | 575 | 589 | 649 | 698 |
| Clinical medicine, n.e.c. | 982 | 996 | 979 | 1,112 | 1,084 | 1,160 | 1,224 | 1,314 | 1,384 |
| Health related, n.e.c. | 2,290 | 2,473 | 2,647 | 2,662 | 2,900 | 3,333 | 3,559 | 4,292 | 4,930 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 18. Part-time science and engineering graduate students in doctorate-granting institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 106,220 | 106,999 | 108,971 | 114,417 | 116,676 | 117,545 | 117,764 | 117,077 | 123,143 |
| Total, science/engineering fields | 89,832 | 90,199 | 90,965 | 95,988 | 96,732 | 97,700 | 97,059 | 95,504 | 100,000 |
| Engineering, total | 29,488 | 32,625 | 33,137 | 35,415 | 36,759 | 36,644 | 35,204 | 34,345 | 36,084 |
| Aerospace | 414 | 551 | 573 | 646 | 753 | 731 | 764 | 750 | 969 |
| Agricultural | 136 | 203 | 181 | 174 | 173 | 139 | 160 | 180 | 146 |
| Biomedical | 156 | 173 | 182 | 200 | 201 | 261 | 274 | 281 | 306 |
| Chemical | 1,405 | 1,562 | 1,540 | 1,521 | 1,349 | 1,358 | 1,202 | 1,116 | 1,198 |
| Civil | 4,101 | 4,503 | 4,518 | 4,571 | 4,398 | 4,245 | 4,267 | 4,284 | 4,609 |
| Electrical | 9,305 | 10,691 | 11,138 | 12,017 | 12,108 | 12,571 | 12,766 | 12,616 | 12,574 |
| Engineering science | 588 | 642 | 644 | 592 | 701 | 758 | 768 | 809 | 1,208 |
| Industrial | 5,418 | 5,652 | 5,664 | 6,729 | 7,353 | 7,620 | 6,642 | 5,833 | 5,745 |
| Mechanical | 3,639 | 3,911 | 4,455 | 4,563 | 5,008 | 5,124 | 4,852 | 4,790 | 5,006 |
| Metallurgical/materials | 577 | 652 | 709 | 748 | 722 | 817 | 766 | 767 | 860 |
| Mining | 73 | 94 | 74 | 92 | 68 | 78 | 71 | 76 | 103 |
| Nuclear | 259 | 151 | 216 | 190 | 206 | 235 | 198 | 211 | 198 |
| Petroleum | 110 | 117 | 130 | 201 | 175 | 171 | 141 | 157 | 181 |
| Engineering, n.e.c. | 3,307 | 3,723 | 3,113 | 3,171 | 3,544 | 2,536 | 2,333 | 2,475 | 2,981 |
| Sciences, total | 60,344 | 57,574 | 57,828 | 60,573 | 59,973 | 61,056 | 61,855 | 61,159 | 63,916 |
| Physical sciences | 3,172 | 3,245 | 3,263 | 3,374 | 3,474 | 3,315 | 3,434 | 3,378 | 3,659 |
| Astronomy | 42 | 33 | 43 | 36 | 35 | 41 | 26 | 27 | 21 |
| Chemistry | 2,038 | 2,053 | 1,984 | 2,085 | 2,065 | 1,932 | 1,900 | 1,903 | 2,071 |
| Physics | 1,074 | 1,151 | 1,185 | 1,194 | 1,261 | 1,252 | 1,414 | 1,355 | 1,461 |
| Physical sciences, n.e.c. | 18 | 8 | 51 | 59 | 113 | 90 | 94 | 93 | 106 |
| Earth, atmospheric, and ocean sciences | 2,886 | 2,784 | 3,020 | 3,346 | 3,127 | 3,271 | 3,034 | 2,962 | 3,018 |
| Atmospheric sciences | 106 | 106 | 125 | 84 | 102 | 126 | 104 | 97 | 97 |
| Geosciences | 1,763 | 1,780 | 1,919 | 2,183 | 2,066 | 1,974 | 1,844 | 1,788 | 1,625 |
| Oceanography | 383 | 360 | 411 | 464 | 375 | 419 | 350 | 325 | 319 |
| Earth, atmos., and ocean sci., n.e.c. | 634 | 538 | 565 | 615 | 584 | 752 | 736 | 752 | 977 |
| Mathematical sciences | 4,592 | 4,569 | 4,454 | 4,108 | 3,936 | 3,847 | 4,083 | 3,881 | 4,095 |
| Computer sciences | 7,672 | 9,030 | 10,258 | 11,449 | 11,815 | 12,444 | 13,041 | 12,450 | 12,966 |
| Agricultural sciences | 2,077 | 2,118 | 2,004 | 1,959 | 1,823 | 1,728 | 1,714 | 1,817 | 1,893 |
| Biological sciences | 6,668 | 6,375 | 6,275 | 6,794 | 6,760 | 6,463 | 6,436 | 6,371 | 6,922 |
| Anatomy | 137 | 116 | 93 | 102 | 80 | 87 | 83 | 79 | 89 |
| Biochemistry | 258 | 213 | 215 | 186 | 227 | 178 | 167 | 249 | 198 |
| Biology | 2,249 | 2,032 | 2,001 | 2,357 | 2,420 | 2,167 | 2,121 | 1,957 | 2,176 |
| Biometry/epidemiology | 247 | 279 | 253 | 364 | 386 | 420 | 499 | 541 | 702 |
| Biophysics | 17 | 13 | 14 | 60 | 98 | 123 | 48 | 45 | 37 |
| Botany | 459 | 392 | 402 | 493 | 398 | 423 | 390 | 408 | 405 |
| Cell biology | 33 | 44 | 47 | 23 | 61 | 78 | 55 | 57 | 77 |
| Ecology | 113 | 127 | 169 | 114 | 112 | 115 | 141 | 165 | 199 |
| Entomology/parasitology | 200 | 170 | 174 | 204 | 199 | 182 | 179 | 172 | 179 |
| Genetics | 63 | 67 | 70 | 61 | 90 | 106 | 101 | 81 | 89 |
| Microbiology | 493 | 457 | 426 | 475 | 427 | 362 | 412 | 443 | 461 |
| Nutrition | 1,091 | 1,211 | 1,128 | 1,089 | 1,059 | 1,084 | 1,169 | 1,180 | 1,138 |
| Pathology | 399 | 356 | 347 | 279 | 268 | 266 | 226 | 217 | 241 |
| Pharmacology | 134 | 132 | 120 | 115 | 121 | 149 | 139 | 130 | 144 |
| Physiology | 253 | 228 | 191 | 225 | 215 | 217 | 212 | 149 | 160 |
| Zoology | 353 | 365 | 422 | 404 | 357 | 322 | 314 | 309 | 420 |
| Biosciences, n.e.c. | 169 | 173 | 203 | 243 | 242 | 184 | 180 | 189 | 207 |
| Psychology | 8,087 | 7,861 | 8,433 | 9,156 | 8,661 | 8,925 | 9,139 | 8,914 | 9,755 |
| Social sciences | 25,190 | 21,592 | 20,121 | 20,387 | 20,377 | 21,063 | 20,974 | 21,386 | 21,608 |
| Agricultural economics | 267 | 243 | 237 | 254 | 269 | 329 | 331 | 342 | 298 |
| Anthropology | 1,661 | 1,533 | 1,471 | 1,603 | 1,586 | 1,571 | 1,511 | 1,580 | 1,586 |
| Economics (except agricultural) | 3,565 | 3,156 | 3,034 | 2,777 | 2,570 | 2,530 | 2,532 | 2,572 | 2,595 |
| Geography | 731 | 615 | 607 | 592 | 649 | 628 | 654 | 734 | 747 |
| History and philosophy of science | 33 | 24 | 31 | 45 | 29 | 27 | 22 | 39 | 30 |
| Linguistics | 529 | 497 | 656 | 501 | 512 | 532 | 443 | 530 | 513 |
| Political science | 11,676 | 10,609 | 9,280 | 9,887 | 9,985 | 10,810 | 10,426 | 10,546 | 10,586 |
| Sociology | 2,022 | 1,810 | 1,698 | 1,641 | 1,554 | 1,587 | 1,613 | 1,686 | 1,604 |
| Sociology/anthropology | 430 | 418 | 388 | 372 | 354 | 355 | 374 | 339 | 381 |
| Social sciences, n.e.c. | 4,276 | 2,687 | 2,719 | 2,715 | 2,869 | 2,694 | 3,068 | 3,020 | 3,270 |
| Total, health fields | 16,388 | 16,800 | 18,006 | 18,429 | 19,964 | 19,845 | 20,705 | 21,573 | 23,143 |
| Dentistry | 109 | 73 | 82 | 90 | 113 | 148 | 155 | 148 | 129 |
| Neurology | 2 | 3 | 4 | 2 | 3 | 2 | 3 | 15 | 12 |
| Nursing | 8,165 | 9,260 | 10,231 | 10,196 | 10,815 | 10,683 | 10,959 | 11,595 | 12,798 |
| Pharmaceutical sciences | 806 | 859 | 731 | 743 | 830 | 779 | 703 | 792 | 824 |
| Preventive medicine/community health | 2,647 | 2,566 | 2,742 | 3,016 | 3,007 | 3,247 | 3,356 | 3,370 | 3,631 |
| Speech pathology/audiology | 2,291 | 1,506 | 1,485 | 1,539 | 1,688 | 1,518 | 1,612 | 1,609 | 1,845 |
| Veterinary sciences | 90 | 103 | 129 | 119 | 121 | 136 | 146 | 133 | 183 |
| Clinical medicine, n.e.c. | 330 | 306 | 329 | 386 | 364 | 382 | 398 | 289 | 289 |
| Health related, n.e.c. | 1,948 | 2,124 | 2,273 | 2,338 | 3,003 | 2,950 | 3,373 | 3,623 | 3,432 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 19. Science and engineering graduate students in master's-granting institutions by field: 1982-90 1/

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 48,792 | 50,935 | 51,747 | 51,920 | 52,175 | 53,049 | 52,288 | 55,927 | 55,927 |
| Total, science/engineering fields | 41,921 | 43,849 | 44,477 | 44,425 | 44,687 | 45,045 | 44,153 | 47,481 | 47,481 |
| Engineering, total | 6,401 | 6,628 | 6,544 | 6,729 | 7,299 | 7,675 | 7,036 | 7,937 | 7,937 |
| Aerospace | 8 | 32 | 32 | 32 | 33 | 35 | 37 | 67 | 67 |
| Agricultural | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomedical | 52 | 59 | 57 | 56 | 68 | 76 | 79 | 66 | 66 |
| Chemical | 260 | 211 | 177 | 135 | 121 | 121 | 86 | 99 | 99 |
| Civil | 977 | 885 | 832 | 827 | 885 | 1,093 | 926 | 992 | 992 |
| Electrical | 1,415 | 1,668 | 1,707 | 1,753 | 2,068 | 2,311 | 2,182 | 2,948 | 2,948 |
| Engineering science | 290 | 280 | 253 | 260 | 234 | 232 | 219 | 19 | 19 |
| Industrial | 862 | 827 | 880 | 994 | 1,052 | 1,003 | 1,030 | 1,235 | 1,235 |
| Mechanical | 700 | 822 | 889 | 911 | 1,133 | 1,214 | 1,183 | 1,279 | 1,279 |
| Metallurgical/materials | 96 | 109 | 85 | 120 | 131 | 122 | 108 | 120 | 120 |
| Mining | 25 | 26 | 25 | 26 | 25 | 29 | 39 | 30 | 30 |
| Nuclear | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum | 6 | 13 | 12 | 30 | 21 | 28 | 31 | 14 | 14 |
| Engineering, n.e.c. | 1,692 | 1,696 | 1,595 | 1,585 | 1,528 | 1,411 | 1,116 | 1,068 | 1,068 |
| Sciences, total | 35,520 | 37,221 | 37,933 | 37,696 | 37,388 | 37,370 | 37,117 | 39,544 | 39,544 |
| Physical sciences | 1,688 | 1,719 | 1,654 | 1,683 | 1,717 | 1,771 | 1,760 | 1,821 | 1,821 |
| Astronomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry | 1,222 | 1,253 | 1,157 | 1,157 | 1,143 | 1,157 | 1,096 | 1,104 | 1,104 |
| Physics | 291 | 299 | 350 | 380 | 429 | 480 | 525 | 544 | 544 |
| Physical sciences, n.e.c. | 175 | 167 | 147 | 146 | 145 | 134 | 139 | 173 | 173 |
| Earth, atmospheric, and ocean sciences | 1,370 | 1,263 | 1,326 | 1,328 | 1,174 | 1,154 | 1,161 | 1,171 | 1,171 |
| Atmospheric sciences | 12 | 12 | 12 | 13 | 5 | 4 | 11 | 12 | 12 |
| Geosciences | 573 | 633 | 654 | 761 | 643 | 613 | 591 | 506 | 506 |
| Oceanography | 157 | 156 | 173 | 97 | 101 | 105 | 107 | 137 | 137 |
| Earth, atmos., and ocean sci., n.e.c. | 628 | 462 | 487 | 457 | 425 | 432 | 452 | 516 | 516 |
| Mathematical sciences | 2,429 | 2,512 | 2,411 | 2,345 | 2,327 | 2,381 | 2,249 | 2,477 | 2,477 |
| Computer sciences | 4,229 | 5,310 | 5,444 | 6,021 | 6,221 | 6,054 | 6,045 | 6,326 | 6,326 |
| Agricultural sciences | 718 | 752 | 735 | 700 | 654 | 665 | 698 | 683 | 683 |
| Biological sciences | 4,394 | 4,446 | 4,208 | 4,048 | 3,847 | 3,753 | 3,621 | 3,803 | 3,803 |
| Anatomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biochemistry | 34 | 40 | 30 | 34 | 33 | 45 | 32 | 39 | 39 |
| Biology | 3,509 | 3,520 | 3,369 | 3,181 | 2,939 | 2,884 | 2,810 | 2,887 | 2,887 |
| Biometry/epidemiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biophysics | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Botany | 42 | 45 | 33 | 28 | 48 | 45 | 44 | 38 | 38 |
| Cell biology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ecology | 33 | 45 | 54 | 50 | 56 | 64 | 65 | 72 | 72 |
| Entomology/parasitology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Genetics | 50 | 49 | 47 | 45 | 43 | 41 | 42 | 44 | 44 |
| Microbiology | 138 | 125 | 97 | 105 | 94 | 95 | 66 | 66 | 66 |
| Nutrition | 235 | 258 | 254 | 309 | 334 | 312 | 301 | 342 | 342 |
| Pathology | 47 | 43 | 44 | 47 | 65 | 56 | 57 | 66 | 66 |
| Pharmacology | 11 | 6 | 5 | 2 | 2 | 1 | 1 | 2 | 2 |
| Physiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Zoology | 32 | 40 | 37 | 32 | 18 | 16 | 12 | 14 | 14 |
| Biosciences, n.e.c. | 263 | 275 | 238 | 215 | 215 | 194 | 191 | 235 | 235 |
| Psychology | 10,101 | 11,028 | 11,041 | 10,818 | 10,895 | 11,334 | 11,874 | 12,729 | 12,729 |
| Social sciences | 10,591 | 10,191 | 11,116 | 10,753 | 10,553 | 10,258 | 9,709 | 10,534 | 10,534 |
| Agricultural economics | 44 | 58 | 67 | 68 | 64 | 51 | 50 | 49 | 49 |
| Anthropology | 260 | 245 | 219 | 223 | 213 | 227 | 233 | 212 | 212 |
| Economics (except agricultural) | 1,083 | 1,147 | 1,087 | 1,111 | 946 | 896 | 833 | 860 | 860 |
| Geography | 448 | 420 | 431 | 394 | 464 | 521 | 570 | 662 | 662 |
| History and philosophy of science | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linguistics | 129 | 209 | 240 | 251 | 290 | 362 | 376 | 436 | 436 |
| Political science | 6,052 | 5,573 | 5,581 | 5,577 | 5,442 | 5,170 | 5,453 | 5,933 | 5,933 |
| Sociology | 576 | 544 | 618 | 565 | 603 | 615 | 606 | 694 | 694 |
| Sociology/anthropology | 91 | 186 | 115 | 128 | 117 | 100 | 79 | 76 | 76 |
| Social sciences, n.e.c. | 1,908 | 1,809 | 2,756 | 2,436 | 2,414 | 2,316 | 1,509 | 1,612 | 1,612 |
| Total, health fields | 6,871 | 7,086 | 7,270 | 7,495 | 7,488 | 8,004 | 8,135 | 8,446 | 8,446 |
| Dentistry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neurology | 14 | 14 | 14 | 13 | 10 | 22 | 16 | 9 | 9 |
| Nursing | 1,893 | 1,959 | 2,074 | 2,230 | 2,230 | 2,446 | 2,695 | 2,900 | 2,900 |
| Pharmaceutical sciences | 11 | 16 | 19 | 20 | 10 | 5 | 2 | 8 | 8 |
| Preventive medicine/community health | 140 | 187 | 186 | 186 | 187 | 201 | 142 | 139 | 139 |
| Speech pathology/audiology | 1,865 | 1,999 | 1,973 | 2,002 | 1,927 | 1,960 | 1,811 | 2,014 | 2,014 |
| Veterinary sciences | 25 | 26 | 26 | 27 | 25 | 20 | 17 | 19 | 19 |
| Clinical medicine, n.e.c. | 426 | 343 | 263 | 229 | 250 | 238 | 226 | 201 | 201 |
| Health related, n.e.c. | 2,497 | 2,542 | 2,717 | 2,788 | 2,851 | 3,112 | 3,226 | 3,156 | 3,156 |

1/ Master's-granting institutions were surveyed on a sample basis from 1984 through 1987. Data shown here are therefore subject to sampling error.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 20. Full-time science and engineering graduate students in master's-granting institutions by field: 1982-90 1/

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 16,186 | 17,621 | 18,137 | 17,862 | 17,934 | 18,534 | 18,263 | 19,052 | 19,052 |
| Total, science/engineering fields | 13,816 | 15,071 | 15,597 | 15,284 | 15,356 | 15,765 | 15,581 | 16,349 | 16,349 |
| Engineering, total | 1,541 | 1,637 | 1,565 | 1,476 | 1,695 | 1,842 | 1,921 | 2,183 | 2,183 |
| Aerospace | 3 | 15 | 14 | 14 | 16 | 17 | 16 | 30 | 30 |
| Agricultural | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomedical | 23 | 19 | 15 | 12 | 14 | 40 | 53 | 39 | 39 |
| Chemical | 84 | 79 | 78 | 52 | 52 | 42 | 29 | 37 | 37 |
| Civil | 330 | 274 | 236 | 242 | 278 | 271 | 328 | 331 | 331 |
| Electrical | 256 | 349 | 396 | 394 | 490 | 583 | 641 | 799 | 799 |
| Engineering science | 25 | 17 | 16 | 18 | 18 | 17 | 13 | 10 | 10 |
| Industrial | 241 | 192 | 162 | 175 | 171 | 188 | 222 | 269 | 269 |
| Mechanical | 139 | 152 | 187 | 192 | 202 | 209 | 240 | 279 | 279 |
| Metallurgical/materials | 25 | 18 | 9 | 18 | 30 | 27 | 23 | 28 | 28 |
| Mining | 22 | 24 | 21 | 20 | 23 | 29 | 36 | 26 | 26 |
| Nuclear | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum | 6 | 13 | 12 | 26 | 21 | 25 | 29 | 12 | 12 |
| Engineering, n.e.c. | 387 | 485 | 419 | 313 | 380 | 394 | 291 | 323 | 323 |
| Sciences, total | 12,275 | 13,434 | 14,032 | 13,808 | 13,661 | 13,923 | 13,660 | 14,166 | 14,166 |
| Physical sciences | 701 | 703 | 705 | 731 | 695 | 762 | 796 | 764 | 764 |
| Astronomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry | 532 | 528 | 508 | 513 | 460 | 500 | 506 | 447 | 447 |
| Physics | 131 | 134 | 164 | 184 | 204 | 226 | 265 | 279 | 279 |
| Physical sciences, n.e.c. | 38 | 41 | 33 | 34 | 31 | 36 | 25 | 38 | 38 |
| Earth, atmospheric, and ocean sciences | 518 | 552 | 553 | 568 | 461 | 446 | 459 | 423 | 423 |
| Atmospheric sciences | 8 | 7 | 6 | 5 | 1 | 2 | 4 | 7 | 7 |
| Geosciences | 236 | 295 | 296 | 353 | 274 | 255 | 254 | 198 | 198 |
| Oceanography | 42 | 65 | 81 | 42 | 42 | 48 | 53 | 54 | 54 |
| Earth, atmos., and ocean sci., n.e.c. | 232 | 185 | 170 | 168 | 144 | 141 | 148 | 164 | 164 |
| Mathematical sciences | 645 | 648 | 706 | 673 | 671 | 704 | 714 | 681 | 681 |
| Computer sciences | 1,260 | 1,411 | 1,479 | 1,727 | 1,921 | 1,933 | 1,895 | 1,938 | 1,938 |
| Agricultural sciences | 372 | 416 | 427 | 376 | 377 | 372 | 398 | 388 | 388 |
| Biological sciences | 1,741 | 1,878 | 1,792 | 1,666 | 1,569 | 1,553 | 1,513 | 1,541 | 1,541 |
| Anatomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biochemistry | 18 | 26 | 18 | 17 | 15 | 14 | 9 | 16 | 16 |
| Biology | 1,405 | 1,491 | 1,436 | 1,337 | 1,229 | 1,228 | 1,212 | 1,219 | 1,219 |
| Biometry/epidemiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biophysics | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Botany | 26 | 30 | 24 | 22 | 39 | 40 | 36 | 33 | 33 |
| Cell biology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ecology | 5 | 9 | 12 | 12 | 13 | 12 | 14 | 7 | 7 |
| Entomology/parasitology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Genetics | 47 | 45 | 44 | 43 | 42 | 41 | 41 | 43 | 43 |
| Microbiology | 18 | 24 | 23 | 12 | 18 | 19 | 13 | 9 | 9 |
| Nutrition | 87 | 106 | 123 | 124 | 127 | 122 | 118 | 137 | 137 |
| Pathology | 7 | 5 | 6 | 7 | 5 | 15 | 9 | 15 | 15 |
| Pharmacology | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Physiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Zoology | 18 | 27 | 19 | 19 | 12 | 12 | 11 | 8 | 8 |
| Biosciences, n.e.c. | 109 | 113 | 86 | 73 | 69 | 50 | 50 | 54 | 54 |
| Psychology | 3,918 | 4,551 | 4,508 | 4,435 | 4,526 | 4,868 | 5,104 | 5,511 | 5,511 |
| Social sciences | 3,120 | 3,275 | 3,862 | 3,632 | 3,441 | 3,285 | 2,781 | 2,920 | 2,920 |
| Agricultural economics | 22 | 53 | 52 | 44 | 49 | 34 | 31 | 27 | 27 |
| Anthropology | 78 | 74 | 68 | 111 | 55 | 71 | 77 | 75 | 75 |
| Economics (except agricultural) | 392 | 356 | 346 | 361 | 335 | 320 | 285 | 290 | 290 |
| Geography | 152 | 177 | 178 | 174 | 166 | 216 | 233 | 243 | 243 |
| History and philosophy of science | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linguistics | 12 | 59 | 55 | 34 | 51 | 61 | 82 | 79 | 79 |
| Political science | 1,534 | 1,575 | 1,738 | 1,623 | 1,586 | 1,379 | 1,393 | 1,464 | 1,464 |
| Sociology | 227 | 228 | 321 | 283 | 248 | 283 | 256 | 289 | 289 |
| Sociology/anthropology | 45 | 75 | 34 | 31 | 34 | 33 | 28 | 26 | 26 |
| Social sciences, n.e.c. | 658 | 678 | 1,070 | 971 | 917 | 888 | 396 | 427 | 427 |
| Total, health fields | 2,370 | 2,550 | 2,540 | 2,578 | 2,578 | 2,769 | 2,682 | 2,703 | 2,703 |
| Dentistry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neurology | 14 | 14 | 14 | 13 | 3 | 5 | 7 | 3 | 3 |
| Nursing | 416 | 478 | 431 | 509 | 499 | 574 | 691 | 669 | 669 |
| Pharmaceutical sciences | 1 | 2 | 2 | 2 | 0 | 1 | 1 | 0 | 0 |
| Preventive medicine/community health | 27 | 35 | 40 | 47 | 47 | 50 | 44 | 35 | 35 |
| Speech pathology/audiology | 917 | 918 | 973 | 1,001 | 1,051 | 1,075 | 1,000 | 1,168 | 1,168 |
| Veterinary sciences | 22 | 26 | 23 | 24 | 20 | 17 | 17 | 19 | 19 |
| Clinical medicine, n.e.c. | 94 | 95 | 60 | 48 | 63 | 50 | 46 | 52 | 52 |
| Health related, n.e.c. | 879 | 982 | 997 | 934 | 895 | 997 | 876 | 757 | 757 |

1/ Master's-granting institutions were surveyed on a sample basis from 1984 through 1987. Data shown here are therefore subject to sampling error.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 21. Part-time science and engineering graduate students in master's-granting institutions by field: 1982-90 1/

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 32,606 | 33,314 | 33,610 | 34,058 | 34,241 | 34,515 | 34,025 | 36,875 | 36,875 |
| Total, science/engineering fields | 28,105 | 28,778 | 28,880 | 29,141 | 29,331 | 29,280 | 28,572 | 31,132 | 31,132 |
| Engineering, total | 4,860 | 4,991 | 4,979 | 5,253 | 5,604 | 5,833 | 5,115 | 5,754 | 5,754 |
| Aerospace | 5 | 17 | 18 | 18 | 17 | 18 | 21 | 37 | 37 |
| Agricultural | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomedical | 29 | 40 | 42 | 44 | 54 | 36 | 26 | 27 | 27 |
| Chemical | 176 | 132 | 99 | 83 | 69 | 79 | 57 | 62 | 62 |
| Civil | 647 | 611 | 596 | 585 | 607 | 822 | 598 | 661 | 661 |
| Electrical | 1,179 | 1,319 | 1,311 | 1,359 | 1,578 | 1,728 | 1,541 | 2,149 | 2,149 |
| Engineering science | 265 | 263 | 237 | 242 | 216 | 215 | 206 | 9 | 9 |
| Industrial | 621 | 635 | 718 | 819 | 881 | 815 | 808 | 966 | 966 |
| Mechanical | 561 | 670 | 702 | 719 | 931 | 1,005 | 943 | 1,000 | 1,000 |
| Metallurgical/materials | 69 | 91 | 76 | 102 | 101 | 95 | 85 | 92 | 92 |
| Mining | 3 | 2 | 4 | 6 | 2 | 0 | 3 | 4 | 4 |
| Nuclear | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum | 0 | 0 | 0 | 4 | 0 | 3 | 2 | 2 | 2 |
| Engineering, n.e.c. | 1,305 | 1,211 | 1,176 | 1,272 | 1,148 | 1,017 | 825 | 745 | 745 |
| Sciences, total | 23,245 | 23,787 | 23,901 | 23,888 | 23,727 | 23,447 | 23,457 | 25,378 | 25,378 |
| Physical sciences | 987 | 1,016 | 949 | 952 | 1,022 | 1,009 | 964 | 1,057 | 1,057 |
| Astronomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry | 690 | 725 | 649 | 644 | 683 | 657 | 590 | 657 | 657 |
| Physics | 160 | 165 | 186 | 196 | 225 | 254 | 260 | 265 | 265 |
| Physical sciences, n.e.c. | 137 | 126 | 114 | 112 | 114 | 98 | 114 | 135 | 135 |
| Earth, atmospheric, and ocean sciences | 852 | 711 | 773 | 760 | 713 | 708 | 702 | 748 | 748 |
| Atmospheric sciences | 4 | 5 | 6 | 8 | 4 | 2 | 7 | 5 | 5 |
| Geosciences | 337 | 338 | 358 | 408 | 369 | 358 | 337 | 308 | 308 |
| Oceanography | 115 | 91 | 92 | 55 | 59 | 57 | 54 | 83 | 83 |
| Earth, atmos., and ocean sci., n.e.c. | 396 | 277 | 317 | 289 | 281 | 291 | 304 | 352 | 352 |
| Mathematical sciences | 1,784 | 1,864 | 1,705 | 1,672 | 1,656 | 1,677 | 1,535 | 1,796 | 1,796 |
| Computer sciences | 2,969 | 3,899 | 3,965 | 4,294 | 4,300 | 4,121 | 4,150 | 4,388 | 4,388 |
| Agricultural sciences | 346 | 336 | 308 | 324 | 277 | 293 | 300 | 295 | 295 |
| Biological sciences | 2,653 | 2,568 | 2,416 | 2,382 | 2,278 | 2,200 | 2,108 | 2,262 | 2,262 |
| Anatomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biochemistry | 16 | 14 | 12 | 17 | 18 | 31 | 23 | 23 | 23 |
| Biology | 2,104 | 2,029 | 1,933 | 1,844 | 1,710 | 1,656 | 1,598 | 1,668 | 1,668 |
| Biometry/epidemiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biophysics | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Botany | 16 | 15 | 9 | 6 | 9 | 5 | 8 | 5 | 5 |
| Cell biology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ecology | 28 | 36 | 42 | 38 | 43 | 52 | 51 | 65 | 65 |
| Entomology/parasitology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Genetics | 3 | 4 | 3 | 2 | 1 | 0 | 1 | 1 | 1 |
| Microbiology | 120 | 101 | 74 | 93 | 76 | 76 | 53 | 55 | 55 |
| Nutrition | 148 | 152 | 131 | 185 | 207 | 190 | 183 | 205 | 205 |
| Pathology | 40 | 38 | 38 | 40 | 60 | 41 | 48 | 51 | 51 |
| Pharmacology | 10 | 4 | 4 | 2 | 2 | 1 | 1 | 2 | 2 |
| Physiology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Zoology | 14 | 13 | 18 | 13 | 6 | 4 | 1 | 6 | 6 |
| Biosciences, n.e.c. | 154 | 162 | 152 | 142 | 146 | 144 | 141 | 181 | 181 |
| Psychology | 6,183 | 6,477 | 6,533 | 6,383 | 6,369 | 6,466 | 6,770 | 7,218 | 7,218 |
| Social sciences | 7,471 | 6,916 | 7,252 | 7,121 | 7,112 | 6,973 | 6,928 | 7,614 | 7,614 |
| Agricultural economics | 22 | 5 | 15 | 24 | 15 | 17 | 19 | 22 | 22 |
| Anthropology | 182 | 171 | 151 | 112 | 158 | 156 | 158 | 137 | 137 |
| Economics (except agricultural) | 691 | 791 | 741 | 750 | 611 | 576 | 548 | 570 | 570 |
| Geography | 296 | 243 | 253 | 220 | 298 | 305 | 337 | 419 | 419 |
| History and philosophy of science | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linguistics | 117 | 150 | 185 | 217 | 239 | 301 | 292 | 357 | 357 |
| Political science | 4,518 | 3,998 | 3,843 | 3,954 | 3,856 | 3,791 | 4,060 | 4,469 | 4,469 |
| Sociology | 349 | 316 | 297 | 282 | 355 | 332 | 350 | 405 | 405 |
| Sociology/anthropology | 46 | 111 | 81 | 97 | 83 | 67 | 51 | 50 | 50 |
| Social sciences, n.e.c. | 1,250 | 1,131 | 1,686 | 1,465 | 1,497 | 1,428 | 1,113 | 1,185 | 1,185 |
| Total, health fields | 4,501 | 4,536 | 4,730 | 4,917 | 4,910 | 5,235 | 5,453 | 5,743 | 5,743 |
| Dentistry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neurology | 0 | 0 | 0 | 0 | 7 | 17 | 7 | 6 | 6 |
| Nursing | 1,477 | 1,481 | 1,643 | 1,721 | 1,731 | 1,872 | 2,004 | 2,231 | 2,231 |
| Pharmaceutical sciences | 10 | 14 | 17 | 18 | 10 | 4 | 3 | 8 | 8 |
| Preventive medicine/community health | 113 | 152 | 144 | 139 | 140 | 151 | 98 | 104 | 104 |
| Speech pathology/audiology | 948 | 1,081 | 1,000 | 1,001 | 876 | 885 | 811 | 846 | 846 |
| Veterinary sciences | 3 | 0 | 3 | 3 | 3 | 3 | 0 | 0 | 0 |
| Clinical medicine, n.e.c. | 332 | 248 | 203 | 181 | 187 | 188 | 180 | 149 | 149 |
| Health related, n.e.c. | 1,618 | 1,560 | 1,720 | 1,854 | 1,956 | 2,115 | 2,350 | 2,399 | 2,399 |

1/ Master's-granting institutions were surveyed on a sample basis from 1984 through 1987. Data shown here are therefore subject to sampling error.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

Page 1 of 11

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **Total, all institutions** | 458,943 | 292,270 | 109,299 | 57,374 |
| **New England** | 34,324 | 20,719 | 9,435 | 4,170 |
| **Connecticut** | 7,443 | 4,849 | 1,473 | 1,121 |
| Central Connecticut State University | 33 | 33 | 0 | 0 |
| Connecticut College | 19 | 19 | 0 | 0 |
| Quinnipiac College | 190 | 0 | 0 | 190 |
| Southern Connecticut State University | 183 | 118 | 0 | 65 |
| St. Joseph College | 160 | 109 | 0 | 51 |
| The Hartford Graduate Center | 867 | 390 | 477 | 0 |
| Trinity College | 34 | 34 | 0 | 0 |
| University of Bridgeport | 326 | 172 | 154 | 0 |
| University of Connecticut | 2,510 | 1,446 | 534 | 530 |
| University of Hartford | 267 | 207 | 0 | 60 |
| University of New Haven | 780 | 649 | 131 | 0 |
| Wesleyan University | 121 | 121 | 0 | 0 |
| Western Connecticut State University | 19 | 19 | 0 | 0 |
| Yale University | 1,934 | 1,532 | 177 | 225 |
| **Maine** | 689 | 545 | 128 | 16 |
| University of Maine | 660 | 532 | 128 | 0 |
| University of New England | 29 | 13 | 0 | 16 |
| **Massachusetts** | 22,179 | 12,435 | 7,040 | 2,704 |
| American International College | 170 | 170 | 0 | 0 |
| Anna Maria College | 139 | 93 | 0 | 46 |
| Assumption College | 202 | 70 | 0 | 132 |
| Boston College | 623 | 429 | 0 | 194 |
| Boston University | 2,346 | 1,368 | 700 | 278 |
| Brandeis University | 416 | 416 | 0 | 0 |
| Bridgewater State College | 34 | 34 | 0 | 0 |
| Clark University | 253 | 253 | 0 | 0 |
| Emerson College | 58 | 0 | 0 | 58 |
| Framingham State College | 18 | 18 | 0 | 0 |
| Harvard University | 3,231 | 2,655 | 184 | 392 |
| MGH Institute of Health Professions | 181 | 6 | 0 | 175 |
| Mass College of Pharmacy/Allied Health | 41 | 25 | 0 | 16 |
| Massachusetts Institute of Technology | 4,245 | 2,014 | 2,227 | 4 |
| Mount Holyoke College | 11 | 11 | 0 | 0 |
| Northeastern University | 2,414 | 904 | 1,106 | 404 |
| Salem State College | 95 | 17 | 0 | 78 |
| Smith College | 5 | 5 | 0 | 0 |
| Southeastern Massachusetts University | 199 | 107 | 67 | 25 |
| Tufts University | 1,037 | 613 | 312 | 112 |
| University of Lowell | 2,070 | 860 | 992 | 218 |
| University of Massachusetts | 3,251 | 2,075 | 679 | 497 |
| Western New England College | 229 | 18 | 143 | 68 |
| Williams College | 23 | 23 | 0 | 0 |
| Woods Hole Oceanographic Institution | 0 | 0 | 0 | 0 |
| Worcester Polytechnic Institute | 878 | 248 | 630 | 0 |
| Worcester State College | 10 | 3 | 0 | 7 |
| **New Hampshire** | 1,175 | 855 | 248 | 72 |
| Dartmouth College | 339 | 235 | 104 | 0 |
| Rivier College | 153 | 153 | 0 | 0 |
| University of New Hampshire | 683 | 467 | 144 | 72 |
| **Rhode Island** | 2,162 | 1,520 | 432 | 210 |
| Brown University | 769 | 665 | 104 | 0 |
| Providence College | 0 | 0 | 0 | 0 |
| Rhode Island College | 83 | 83 | 0 | 0 |
| University of Rhode Island | 1,310 | 772 | 328 | 210 |
| **Vermont** | 676 | 515 | 114 | 47 |
| Goddard College | 49 | 49 | 0 | 0 |
| Marlboro College | 0 | 0 | 0 | 0 |
| Middlebury College | 2 | 2 | 0 | 0 |
| University of Vermont & St Agric Colleg | 625 | 464 | 114 | 47 |
| **Middle Atlantic** | 80,827 | 52,699 | 17,857 | 10,271 |
| **New Jersey** | 11,674 | 7,733 | 3,327 | 614 |
| Drew University | 13 | 13 | 0 | 0 |
| Fairleigh Dickinson University | 912 | 816 | 96 | 0 |
| Kean College of New Jersey | 103 | 103 | 0 | 0 |
| Monmouth College(NJ) | 275 | 156 | 119 | 0 |
| Montclair State College | 414 | 414 | 0 | 0 |
| New Jersey Institute of Technology | 2,283 | 945 | 1,338 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| New Jersey, continued | | | | |
| Princeton University | 1,335 | 993 | 342 | 0 |
| Rutgers the State University | 4,249 | 3,090 | 803 | 356 |
| Seton Hall University | 278 | 154 | 0 | 124 |
| Stevens Institute of Technology | 1,333 | 704 | 629 | 0 |
| Trenton State College | 35 | 8 | 0 | 27 |
| Univ of Med and Dent of New Jersey | 284 | 231 | 0 | 53 |
| William Paterson College | 160 | 106 | 0 | 54 |
| New York | 47,648 | 32,550 | 8,359 | 6,739 |
| Adelphi University | 947 | 406 | 0 | 541 |
| Albany Medical Center Graduate School | 86 | 70 | 0 | 16 |
| Alfred University | 139 | 36 | 103 | 0 |
| CUNY Bernard Baruch College | 451 | 358 | 0 | 93 |
| CUNY Brooklyn College | 834 | 732 | 0 | 102 |
| CUNY City College | 854 | 459 | 375 | 20 |
| CUNY College of Staten Island St George | 82 | 82 | 0 | 0 |
| CUNY Graduate School and Univ Center | 2,068 | 1,857 | 134 | 77 |
| CUNY Herbert H. Lehman College | 78 | 78 | 0 | 0 |
| CUNY Hunter College | 809 | 462 | 0 | 347 |
| CUNY John Jay College of Crim Justice | 459 | 459 | 0 | 0 |
| CUNY Mt. Sinai Sch of Medicine | 146 | 146 | 0 | 0 |
| CUNY Queens College | 474 | 433 | 0 | 41 |
| Clarkson University | 312 | 88 | 224 | 0 |
| College of New Rochelle | 304 | 119 | 0 | 185 |
| College of St Rose | 102 | 31 | 0 | 71 |
| Columbia University Main Division | 2,942 | 1,635 | 800 | 507 |
| Columbia University Teachers College | 1,928 | 1,303 | 0 | 625 |
| Cooper Union | 53 | 0 | 53 | 0 |
| Cornell University | 3,408 | 2,424 | 924 | 60 |
| Fordham University | 566 | 566 | 0 | 0 |
| Hofstra University | 549 | 451 | 0 | 98 |
| Iona College | 544 | 405 | 0 | 139 |
| Ithaca College | 19 | 0 | 0 | 19 |
| Long Island University | 1,503 | 745 | 0 | 758 |
| Manhattan College | 325 | 15 | 310 | 0 |
| Marist College | 254 | 254 | 0 | 0 |
| New School for Social Research | 984 | 984 | 0 | 0 |
| New York Institute of Technology | 939 | 778 | 161 | 0 |
| New York Medical College | 257 | 107 | 0 | 150 |
| New York University | 3,161 | 2,748 | 0 | 413 |
| Niagara University | 15 | 15 | 0 | 0 |
| Pace University | 1,354 | 1,145 | 0 | 209 |
| Polytechnic University | 1,974 | 831 | 1,143 | 0 |
| Pratt Institute | 17 | 0 | 17 | 0 |
| Rensselaer Polytechnic Institute | 1,790 | 577 | 1,213 | 0 |
| Rochester Institute of Technology | 866 | 609 | 248 | 9 |
| Rockefeller University | 128 | 128 | 0 | 0 |
| Russell Sage College | 627 | 305 | 0 | 322 |
| SUNY - Albany | 1,264 | 1,229 | 0 | 35 |
| SUNY - Binghamton | 1,182 | 673 | 426 | 83 |
| SUNY - Buffalo | 3,316 | 1,838 | 929 | 549 |
| SUNY - Coll of Env Science and Forestry | 527 | 440 | 87 | 0 |
| SUNY - Health Sci Ctr at Brooklyn | 108 | 94 | 0 | 14 |
| SUNY - Health Sci Ctr at Syracuse | 51 | 50 | 0 | 1 |
| SUNY - Stony Brook | 2,305 | 1,768 | 207 | 330 |
| SUNY College at Brockport | 562 | 478 | 0 | 84 |
| SUNY College at Buffalo | 89 | 89 | 0 | 0 |
| SUNY College at Cortland | 14 | 14 | 0 | 0 |
| SUNY College at Fredonia | 21 | 21 | 0 | 0 |
| SUNY College at Geneseo | 46 | 12 | 0 | 34 |
| SUNY College at New Paltz | 227 | 227 | 0 | 0 |
| SUNY College at Oneonta | 1 | 1 | 0 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **New York, continued** | | | | |
| SUNY College at Oswego | 220 | 220 | 0 | 0 |
| SUNY College at Plattsburgh | 38 | 38 | 0 | 0 |
| SUNY College at Potsdam | 5 | 5 | 0 | 0 |
| SUNY College of Technology at Utica/Rom | 49 | 49 | 0 | 0 |
| SUNY State College of Optometry | 28 | 0 | 0 | 28 |
| Sarah Lawrence College | 44 | 44 | 0 | 0 |
| St Bonaventure University | 15 | 15 | 0 | 0 |
| St John's University | 707 | 444 | 0 | 263 |
| Syracuse University | 2,155 | 1,180 | 734 | 241 |
| Union College(NY) | 198 | 65 | 70 | 63 |
| University of Rochester | 1,411 | 1,124 | 201 | 86 |
| Vassar College | 3 | 3 | 0 | 0 |
| Wagner College | 126 | 25 | 0 | 101 |
| Yeshiva University | 590 | 565 | 0 | 25 |
| **Pennsylvania** | 21,505 | 12,416 | 6,171 | 2,918 |
| Bloomsburg University of Pennsylvania | 89 | 15 | 0 | 74 |
| Bryn Mawr College | 114 | 114 | 0 | 0 |
| Bucknell University | 58 | 27 | 31 | 0 |
| California University of Pennsylvania | 142 | 142 | 0 | 0 |
| Carnegie-Mellon University | 1,657 | 1,034 | 623 | 0 |
| Clarion University of Pennsylvania | 83 | 83 | 0 | 0 |
| Drexel University | 1,410 | 490 | 920 | 0 |
| Duquesne University | 380 | 227 | 0 | 153 |
| East Stroudsburg Univ of Pennsylvania | 99 | 99 | 0 | 0 |
| Edinboro University of Pennsylvania | 242 | 121 | 0 | 121 |
| Gannon University | 99 | 4 | 35 | 60 |
| Hahnemann University | 506 | 340 | 0 | 166 |
| Indiana University of Pennsylvania | 123 | 123 | 0 | 0 |
| Kutztown University of Pennsylvania | 131 | 131 | 0 | 0 |
| Lehigh University | 764 | 318 | 446 | 0 |
| Mansfield University of Pennsylvania | 12 | 12 | 0 | 0 |
| Marywood College | 130 | 130 | 0 | 0 |
| Millersville University of Pennsylvania | 97 | 79 | 18 | 0 |
| Pennsylvania State University | 4,700 | 2,439 | 2,120 | 141 |
| Phila College of Osteopathic Medicine | 12 | 0 | 0 | 12 |
| Philadelphia Coll of Pharmacy and Sci | 61 | 31 | 0 | 30 |
| Shippensburg University of Pennsylvania | 351 | 351 | 0 | 0 |
| Slippery Rock University of Pennsylvani | 167 | 36 | 0 | 131 |
| St Joseph's University | 428 | 187 | 0 | 241 |
| Swarthmore College | 0 | 0 | 0 | 0 |
| Temple University | 1,505 | 1,024 | 78 | 403 |
| The Medical College of Pennsylvania | 100 | 72 | 0 | 28 |
| Thomas Jefferson University | 158 | 99 | 0 | 59 |
| University of Pennsylvania | 2,526 | 1,868 | 597 | 61 |
| University of Pittsburgh | 3,852 | 1,897 | 799 | 1,156 |
| University of Scranton | 127 | 98 | 0 | 29 |
| Villanova University | 846 | 505 | 341 | 0 |
| West Chester University of Pennsylvania | 355 | 317 | 0 | 38 |
| Widener University | 150 | 0 | 150 | 0 |
| Wilkes University | 33 | 5 | 13 | 15 |
| **East North Central** | 81,426 | 51,424 | 19,478 | 10,524 |
| **Illinois** | 24,381 | 17,358 | 4,145 | 2,878 |
| Bradley University | 249 | 85 | 164 | 0 |
| Chicago Coll of Osteo Medicine | 0 | 0 | 0 | 0 |
| Chicago School of Prof Psych | 158 | 158 | 0 | 0 |
| Chicago State University | 151 | 151 | 0 | 0 |
| De Paul University | 1,444 | 1,341 | 0 | 103 |
| Eastern Illinois University | 156 | 131 | 0 | 25 |
| Forest Institute of Prof Psych | 256 | 256 | 0 | 0 |
| Governors State University | 686 | 444 | 0 | 242 |
| Illinois Institute of Technology | 1,776 | 1,132 | 644 | 0 |
| Illinois State University | 523 | 453 | 0 | 70 |
| Loyola University of Chicago | 730 | 577 | 0 | 153 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **Illinois, continued** | | | | |
| Northeastern Illinois University | 969 | 912 | 0 | 57 |
| Northern Illinois University | 1,116 | 795 | 112 | 209 |
| Northwestern University | 1,920 | 1,108 | 630 | 182 |
| Roosevelt University | 330 | 330 | 0 | 0 |
| Rush University | 471 | 95 | 0 | 376 |
| Sangamon State University | 700 | 651 | 0 | 49 |
| Southern Illinois Univ at Carbondale | 1,565 | 1,107 | 219 | 239 |
| Southern Illinois Univ at Edwardsville | 645 | 395 | 90 | 160 |
| University of Chicago | 2,016 | 1,999 | 0 | 17 |
| University of Health Sciences (Chicago) | 119 | 115 | 0 | 4 |
| University of Illinois at Chicago | 3,121 | 1,445 | 889 | 787 |
| University of Illinois at Urbana | 4,894 | 3,366 | 1,397 | 131 |
| Western Illinois University | 386 | 312 | 0 | 74 |
| **Indiana** | 9,769 | 6,581 | 1,971 | 1,217 |
| Ball State University | 421 | 349 | 0 | 72 |
| Butler University | 34 | 21 | 0 | 13 |
| Indiana State University | 298 | 252 | 28 | 18 |
| Indiana University | 3,914 | 3,125 | 41 | 748 |
| Indiana Wesleyan University | 20 | 0 | 0 | 20 |
| Purdue University | 3,915 | 2,075 | 1,556 | 284 |
| Rose-Hulman Institute of Technology | 135 | 11 | 124 | 0 |
| Saint Francis College | 55 | 55 | 0 | 0 |
| University of Evansville | 67 | 8 | 11 | 48 |
| University of Notre Dame | 807 | 596 | 211 | 0 |
| Valparaiso University | 103 | 89 | 0 | 14 |
| **Michigan** | 16,570 | 9,546 | 5,167 | 1,857 |
| Andrews University | 299 | 148 | 0 | 151 |
| Central Michigan University | 298 | 257 | 0 | 41 |
| Eastern Michigan University | 990 | 748 | 216 | 26 |
| Grand Valley State University | 186 | 74 | 0 | 112 |
| Michigan State University | 2,993 | 2,343 | 485 | 165 |
| Michigan Technological University | 464 | 195 | 269 | 0 |
| Northern Michigan University | 190 | 110 | 0 | 80 |
| Oakland University | 668 | 279 | 337 | 52 |
| University of Detroit | 564 | 388 | 141 | 35 |
| University of Michigan | 5,284 | 2,378 | 2,387 | 519 |
| Wayne State University | 3,155 | 1,495 | 1,111 | 549 |
| Western Michigan University | 1,479 | 1,131 | 221 | 127 |
| **Ohio** | 20,924 | 12,035 | 5,792 | 3,097 |
| Air Force Institute of Technology | 653 | 131 | 522 | 0 |
| Antioch University | 1,146 | 1,104 | 42 | 0 |
| Bowling Green State University | 581 | 559 | 0 | 22 |
| Case Western Reserve University | 1,803 | 787 | 690 | 326 |
| Cleveland State University | 1,099 | 654 | 364 | 81 |
| John Carroll University | 66 | 66 | 0 | 0 |
| Kent State University | 1,029 | 778 | 0 | 251 |
| Medical College of Ohio at Toledo | 292 | 0 | 0 | 292 |
| Miami University | 468 | 427 | 14 | 27 |
| NE Ohio Univ Med School | 0 | 0 | 0 | 0 |
| Ohio State University | 5,188 | 3,195 | 1,185 | 808 |
| Ohio University | 1,004 | 702 | 238 | 64 |
| Union Institute | 501 | 446 | 0 | 55 |
| University of Akron | 1,591 | 823 | 488 | 280 |
| University of Cincinnati | 2,576 | 1,097 | 981 | 498 |
| University of Dayton | 871 | 185 | 686 | 0 |
| University of Toledo | 700 | 390 | 278 | 32 |
| Wright State University | 993 | 517 | 243 | 233 |
| Xavier University | 194 | 66 | 0 | 128 |
| Youngstown State University | 169 | 108 | 61 | 0 |
| **Wisconsin** | 9,782 | 5,904 | 2,403 | 1,475 |
| Marquette University | 815 | 219 | 401 | 195 |
| Medical College of Wisconsin | 91 | 91 | 0 | 0 |
| Milwaukee School of Engineering | 316 | 0 | 316 | 0 |
| University of Wisconsin - Eau Claire | 130 | 28 | 0 | 102 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

Page 5 of 11

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **Wisconsin, continued** | | | | |
| University of Wisconsin - Green Bay | 37 | 37 | 0 | 0 |
| University of Wisconsin - La Crosse | 95 | 51 | 0 | 44 |
| University of Wisconsin - Madison | 5,746 | 3,990 | 1,154 | 602 |
| University of Wisconsin - Milwaukee | 1,747 | 1,137 | 407 | 203 |
| University of Wisconsin - Oshkosh | 293 | 169 | 0 | 124 |
| University of Wisconsin - Platteville | 24 | 12 | 12 | 0 |
| University of Wisconsin - River Falls | 48 | 48 | 0 | 0 |
| University of Wisconsin - Stevens Point | 106 | 44 | 0 | 62 |
| University of Wisconsin - Stout | 272 | 45 | 113 | 114 |
| University of Wisconsin - Whitewater | 64 | 35 | 0 | 29 |
| **West North Central** | 29,625 | 19,301 | 6,334 | 3,990 |
| **Iowa** | 5,516 | 3,526 | 1,224 | 766 |
| Drake University | 144 | 69 | 0 | 75 |
| Iowa State University of Sci & Tech | 2,755 | 1,967 | 784 | 4 |
| Loras College | 22 | 22 | 0 | 0 |
| Maharishi International University | 77 | 77 | 0 | 0 |
| Teikyo Marycrest College | 47 | 47 | 0 | 0 |
| Univ. of Osteopathic Med & Health Sci | 68 | 0 | 0 | 68 |
| University of Iowa | 2,301 | 1,281 | 440 | 580 |
| University of Northern Iowa | 102 | 63 | 0 | 39 |
| **Kansas** | 5,325 | 3,403 | 1,082 | 840 |
| Emporia State University - Kansas | 136 | 136 | 0 | 0 |
| Fort Hays State University | 77 | 77 | 0 | 0 |
| Kansas State University | 1,532 | 1,218 | 277 | 37 |
| Pittsburg State University | 320 | 265 | 55 | 0 |
| University of Kansas | 2,257 | 1,342 | 439 | 476 |
| Washburn University of Topeka | 31 | 31 | 0 | 0 |
| Wichita State University | 972 | 334 | 311 | 327 |
| **Minnesota** | 6,979 | 4,992 | 1,220 | 767 |
| Bemidji State University | 22 | 22 | 0 | 0 |
| Mankato State University | 343 | 305 | 0 | 38 |
| Mayo Graduate School | 98 | 84 | 0 | 14 |
| Moorhead State University | 239 | 189 | 0 | 50 |
| St Mary's College of Minnesota | 597 | 479 | 0 | 118 |
| St. Cloud State University | 70 | 31 | 0 | 39 |
| University of Minnesota | 5,610 | 3,882 | 1,220 | 508 |
| **Missouri** | 7,405 | 4,279 | 2,036 | 1,090 |
| Central Missouri State University | 307 | 225 | 48 | 34 |
| Kirksville College of Osteopathic Med | 1 | 1 | 0 | 0 |
| Lincoln University | 27 | 27 | 0 | 0 |
| Northeast Missouri State University | 30 | 16 | 0 | 14 |
| Northwest Missouri State University | 71 | 71 | 0 | 0 |
| Southeast Missouri State University | 43 | 43 | 0 | 0 |
| Southwest Missouri State University | 198 | 123 | 0 | 75 |
| St. Louis University | 800 | 381 | 0 | 419 |
| Univ of Health Sciences (Kansas City) | 0 | 0 | 0 | 0 |
| University of Missouri - Columbia | 1,983 | 1,282 | 512 | 189 |
| University of Missouri - Kansas City | 812 | 590 | 0 | 222 |
| University of Missouri - Rolla | 1,224 | 317 | 907 | 0 |
| University of Missouri - St Louis | 316 | 316 | 0 | 0 |
| Washington University | 1,593 | 887 | 569 | 137 |
| **Nebraska** | 2,519 | 1,818 | 392 | 309 |
| Creighton University | 130 | 76 | 0 | 54 |
| Kearney State College | 57 | 38 | 0 | 19 |
| University of Nebraska - Lincoln | 1,550 | 1,132 | 392 | 26 |
| University of Nebraska - Omaha | 505 | 505 | 0 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

### Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| Nebraska, continued | | | | |
| University of Nebraska Medical Center | 277 | 67 | 0 | 210 |
| North Dakota | 886 | 704 | 137 | 45 |
| North Dakota State University | 560 | 441 | 108 | 11 |
| University of North Dakota | 326 | 263 | 29 | 34 |
| South Dakota | 995 | 579 | 243 | 173 |
| South Dakota School of Mines and Tech | 242 | 106 | 138 | 0 |
| South Dakota State University | 493 | 252 | 105 | 134 |
| University of South Dakota | 260 | 221 | 0 | 39 |
| South Atlantic | 68,623 | 43,658 | 16,340 | 8,625 |
| Delaware | 1,378 | 994 | 318 | 66 |
| Delaware State College | 21 | 21 | 0 | 0 |
| University of Delaware | 1,357 | 973 | 318 | 66 |
| District of Columbia | 8,508 | 5,925 | 1,935 | 648 |
| Catholic University of America | 940 | 466 | 270 | 204 |
| Gallaudet University | 32 | 0 | 0 | 32 |
| George Washington University | 4,426 | 2,575 | 1,563 | 288 |
| Georgetown University | 703 | 598 | 0 | 105 |
| Howard University | 781 | 679 | 102 | 0 |
| The American University | 1,559 | 1,559 | 0 | 0 |
| University of the District of Columbia | 67 | 48 | 0 | 19 |
| Florida | 13,560 | 8,269 | 3,428 | 1,863 |
| Florida A & M University | 153 | 103 | 24 | 26 |
| Florida Atlantic University | 742 | 389 | 306 | 47 |
| Florida Institute of Technology | 894 | 643 | 251 | 0 |
| Florida International University | 772 | 502 | 143 | 127 |
| Florida State University | 1,483 | 1,236 | 145 | 102 |
| Jacksonville University | 31 | 31 | 0 | 0 |
| Nova University | 923 | 849 | 0 | 74 |
| University of Central Florida | 1,216 | 525 | 559 | 132 |
| University of Florida | 3,588 | 1,948 | 1,104 | 536 |
| University of Miami | 1,213 | 810 | 252 | 151 |
| University of South Florida | 2,158 | 846 | 644 | 668 |
| University of West Florida | 387 | 387 | 0 | 0 |
| Georgia | 8,169 | 4,975 | 2,368 | 826 |
| Augusta College | 45 | 45 | 0 | 0 |
| Clark Atlanta University | 279 | 279 | 0 | 0 |
| Emory University | 1,013 | 595 | 0 | 418 |
| Fort Valley State College | 80 | 80 | 0 | 0 |
| Georgia College | 251 | 207 | 0 | 44 |
| Georgia Institute of Technology | 2,972 | 737 | 2,235 | 0 |
| Georgia Southern University | 73 | 73 | 0 | 0 |
| Georgia State University | 1,111 | 943 | 0 | 168 |
| Institute of Paper Science & Technology | 57 | 0 | 57 | 0 |
| Medical College of Georgia | 202 | 78 | 0 | 124 |
| Mercer University | 88 | 16 | 68 | 4 |
| Morehouse School of Medicine | 0 | 0 | 0 | 0 |
| University of Georgia | 1,653 | 1,593 | 8 | 52 |
| Valdosta State College | 225 | 209 | 0 | 16 |
| West Georgia College | 120 | 120 | 0 | 0 |
| Maryland | 9,827 | 6,401 | 1,890 | 1,536 |
| Coppin State College | 35 | 35 | 0 | 0 |
| Frostburg State University | 54 | 54 | 0 | 0 |
| Hood College | 344 | 344 | 0 | 0 |
| Johns Hopkins University | 1,756 | 998 | 169 | 589 |
| Loyola College | 788 | 478 | 274 | 36 |
| Morgan State University | 69 | 69 | 0 | 0 |
| Towson State University | 476 | 324 | 0 | 152 |
| Uniformed Serv Univ of the Hlth Science | 123 | 92 | 0 | 31 |
| University of Baltimore | 246 | 246 | 0 | 0 |
| University of Maryland - Balt Prof Sch | 965 | 330 | 0 | 635 |
| University of Maryland - Baltimore Cnty | 913 | 724 | 171 | 18 |
| University of Maryland - College Park | 3,931 | 2,580 | 1,276 | 75 |
| University of Maryland Eastern Shore | 82 | 82 | 0 | 0 |
| Washington College | 45 | 45 | 0 | 0 |
| North Carolina | 9,860 | 6,559 | 1,860 | 1,441 |
| Appalachian State University | 196 | 196 | 0 | 0 |
| Duke University | 1,388 | 1,048 | 274 | 66 |
| East Carolina University | 363 | 249 | 0 | 114 |
| North Carolina A & T State University | 240 | 65 | 175 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| North Carolina, continued | | | | |
| North Carolina Central University | 74 | 74 | 0 | 0 |
| North Carolina State Univ at Raleigh | 3,045 | 1,693 | 1,280 | 72 |
| Univ of North Carolina at Chapel Hill | 3,066 | 2,199 | 37 | 830 |
| Univ of North Carolina at Charlotte | 552 | 349 | 94 | 109 |
| Univ of North Carolina at Greensboro | 530 | 308 | 0 | 222 |
| University of North Carolina/Wilmington | 64 | 64 | 0 | 0 |
| Wake Forest University | 219 | 215 | 0 | 4 |
| Western Carolina University | 125 | 101 | 0 | 24 |
| South Carolina | 3,679 | 2,171 | 1,014 | 494 |
| Clemson University | 1,500 | 769 | 680 | 51 |
| College of Charleston | 84 | 84 | 0 | 0 |
| Furman University | 4 | 4 | 0 | 0 |
| Medical University of South Carolina | 168 | 146 | 0 | 22 |
| University of South Carolina | 1,874 | 1,119 | 334 | 421 |
| Winthrop College | 49 | 49 | 0 | 0 |
| Virginia | 11,418 | 7,111 | 3,028 | 1,279 |
| College of William and Mary | 334 | 328 | 6 | 0 |
| Eastern Virginia Medical School | 111 | 111 | 0 | 0 |
| George Mason University | 2,275 | 1,745 | 308 | 222 |
| Hampton University | 127 | 58 | 0 | 69 |
| Hollins College | 10 | 10 | 0 | 0 |
| Institute of Textile Technology | 30 | 0 | 30 | 0 |
| James Madison University | 155 | 102 | 0 | 53 |
| Old Dominion University | 1,195 | 666 | 368 | 161 |
| Radford University | 209 | 149 | 0 | 60 |
| University of Richmond | 23 | 23 | 0 | 0 |
| University of Virginia | 1,906 | 1,214 | 618 | 74 |
| Virginia Commonwealth University | 1,712 | 1,079 | 28 | 605 |
| Virginia Polytechnic Inst and State Uni | 3,275 | 1,570 | 1,670 | 35 |
| Virginia State University | 56 | 56 | 0 | 0 |
| West Virginia | 2,224 | 1,253 | 499 | 472 |
| Marshall University | 237 | 177 | 0 | 60 |
| Univ of West Virginia Coll of Grad Stds | 444 | 273 | 127 | 44 |
| University of Charleston | 7 | 7 | 0 | 0 |
| West Virginia Institute of Technology | 14 | 0 | 14 | 0 |
| West Virginia Sch of Osteopathic Med | 0 | 0 | 0 | 0 |
| West Virginia University | 1,522 | 796 | 358 | 368 |
| East South Central | 19,511 | 12,428 | 4,540 | 2,543 |
| Alabama | 6,334 | 3,551 | 1,624 | 1,159 |
| Alabama A & M University | 240 | 240 | 0 | 0 |
| Alabama State University | 13 | 13 | 0 | 0 |
| Auburn University | 1,699 | 1,059 | 536 | 104 |
| Jacksonville State University | 180 | 180 | 0 | 0 |
| The University of Alabama | 807 | 530 | 262 | 15 |
| The University of Alabama at Birmingham | 1,499 | 557 | 165 | 777 |
| The University of Alabama in Huntsville | 1,099 | 505 | 558 | 36 |
| Troy State University at Montgomery | 162 | 162 | 0 | 0 |
| Tuskegee University | 116 | 62 | 35 | 19 |
| University of Montevallo | 25 | 0 | 0 | 25 |
| University of South Alabama | 494 | 243 | 68 | 183 |
| Kentucky | 3,916 | 2,585 | 845 | 486 |
| Eastern Kentucky University | 175 | 175 | 0 | 0 |
| Morehead State University | 59 | 59 | 0 | 0 |
| Murray State University | 318 | 163 | 50 | 105 |
| Spalding University | 149 | 112 | 0 | 37 |
| University of Kentucky | 1,906 | 1,301 | 327 | 278 |
| University of Louisville | 1,115 | 581 | 468 | 66 |
| Western Kentucky University | 194 | 194 | 0 | 0 |
| Mississippi | 2,698 | 2,032 | 380 | 286 |
| Jackson State University | 238 | 238 | 0 | 0 |
| Mississippi State University | 1,087 | 783 | 291 | 13 |
| Mississippi University for Women | 31 | 0 | 0 | 31 |
| University of Mississippi | 739 | 531 | 89 | 119 |
| University of Southern Mississippi | 603 | 480 | 0 | 123 |
| Tennessee | 6,563 | 4,260 | 1,691 | 612 |
| Austin Peay State University | 56 | 56 | 0 | 0 |
| East Tennessee State University | 343 | 253 | 0 | 90 |
| Fisk University | 23 | 23 | 0 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **Tennessee, continued** | | | | |
| Meharry Medical College | 47 | 47 | 0 | 0 |
| Memphis State University | 896 | 667 | 169 | 60 |
| Middle Tennessee State University | 508 | 508 | 0 | 0 |
| Tennessee State University | 249 | 203 | 46 | 0 |
| Tennessee Technological University | 284 | 135 | 149 | 0 |
| University of Tennessee at Chattanooga | 280 | 198 | 82 | 0 |
| University of Tennessee at Knoxville | 2,668 | 1,366 | 991 | 311 |
| University of Tennessee, Memphis | 215 | 110 | 0 | 105 |
| Vanderbilt University | 996 | 696 | 254 | 46 |
| **West South Central** | 42,372 | 26,144 | 10,072 | 6,156 |
| **Arkansas** | 1,891 | 1,210 | 302 | 379 |
| Arkansas State University | 318 | 238 | 0 | 80 |
| University of Arkansas | 911 | 609 | 302 | 0 |
| University of Arkansas - Med Sci Campus | 197 | 49 | 0 | 148 |
| University of Arkansas at Little Rock | 160 | 134 | 0 | 26 |
| University of Central Arkansas | 305 | 180 | 0 | 125 |
| **Louisiana** | 5,201 | 3,332 | 1,065 | 804 |
| Grambling State University | 9 | 9 | 0 | 0 |
| Louisiana State University System | 2,567 | 1,787 | 659 | 121 |
| Louisiana Tech University | 230 | 59 | 154 | 17 |
| Loyola University in New Orleans | 2 | 2 | 0 | 0 |
| McNeese State University | 126 | 109 | 17 | 0 |
| Nicholls State University | 43 | 43 | 0 | 0 |
| Northeast Louisiana University | 202 | 141 | 0 | 61 |
| Northwest State University | 159 | 46 | 0 | 113 |
| Southeastern Louisiana University | 30 | 30 | 0 | 0 |
| Southern University A & M College | 210 | 210 | 0 | 0 |
| Tulane University of Louisiana | 1,009 | 509 | 127 | 373 |
| University of Southwestern Louisiana | 538 | 387 | 108 | 43 |
| Xavier University | 76 | 0 | 0 | 76 |
| **Oklahoma** | 4,668 | 2,576 | 1,459 | 633 |
| East Central University | 8 | 8 | 0 | 0 |
| Northeastern State University | 139 | 139 | 0 | 0 |
| Oklahoma State University | 1,721 | 1,136 | 568 | 17 |
| Southwestern Oklahoma State University | 68 | 68 | 0 | 0 |
| University of Oklahoma | 2,472 | 1,077 | 779 | 616 |
| University of Tulsa | 260 | 148 | 112 | 0 |
| **Texas** | 30,612 | 19,026 | 7,246 | 4,340 |
| Abilene Christian University | 116 | 95 | 0 | 21 |
| Angelo State University | 125 | 125 | 0 | 0 |
| Baylor College of Dentistry | 47 | 3 | 0 | 44 |
| Baylor College of Medicine | 293 | 239 | 0 | 54 |
| Baylor University | 493 | 320 | 0 | 173 |
| Corpus Christi State University | 162 | 99 | 0 | 63 |
| East Texas State University | 363 | 363 | 0 | 0 |
| Incarnate Word College | 131 | 57 | 0 | 74 |
| Lamar University | 339 | 133 | 154 | 52 |
| Midwestern State University | 149 | 149 | 0 | 0 |
| Prairie View A & M University | 141 | 129 | 12 | 0 |
| Rice University | 800 | 542 | 258 | 0 |
| Sam Houston State University | 573 | 573 | 0 | 0 |
| Southern Methodist University | 901 | 452 | 449 | 0 |
| Southwest Texas State University | 611 | 506 | 0 | 105 |
| St Mary's University of San Antonio | 39 | 0 | 39 | 0 |
| Stephen F. Austin State University | 204 | 204 | 0 | 0 |
| Sul Ross State University | 52 | 52 | 0 | 0 |
| Tarleton State University | 58 | 58 | 0 | 0 |
| Texas A & I University | 262 | 165 | 97 | 0 |
| Texas A & M University | 4,927 | 3,276 | 1,595 | 56 |
| Texas Christian University | 153 | 131 | 0 | 22 |
| Texas College of Osteopathic Medicine | 0 | 0 | 0 | 0 |
| Texas Southern University | 175 | 175 | 0 | 0 |
| Texas Tech University | 1,293 | 954 | 300 | 39 |
| Texas Woman's University | 1,744 | 591 | 0 | 1,153 |
| The University of Texas - Pan American | 9 | 9 | 0 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **Texas, continued** | | | | |
| Trinity University | 105 | 0 | 0 | 105 |
| Univ of Texas Hlth Sci Ctr San Antonio | 465 | 130 | 0 | 335 |
| Univ of Texas Hlth Sci Ctr at Houston | 919 | 400 | 0 | 519 |
| Univ of Texas MD Anderson Cancer Center | 0 | 0 | 0 | 0 |
| Univ of Texas Med Branch at Galveston | 241 | 112 | 0 | 129 |
| Univ of Texas SW Medical Ctr at Dallas | 321 | 243 | 25 | 53 |
| Univ of Texas at Arlington | 2,001 | 930 | 853 | 218 |
| Univ of Texas at Austin | 4,717 | 2,458 | 1,848 | 411 |
| Univ of Texas at Dallas | 1,233 | 920 | 179 | 134 |
| Univ of Texas at El Paso | 766 | 335 | 289 | 142 |
| University of Central Texas | 102 | 102 | 0 | 0 |
| University of Houston - Victoria | 29 | 29 | 0 | 0 |
| University of Houston at Clear Lake Cit | 1,274 | 1,114 | 95 | 65 |
| University of Houston-University Park | 2,578 | 1,437 | 934 | 207 |
| University of North Texas | 1,206 | 1,082 | 26 | 98 |
| University of Texas at San Antonio | 286 | 212 | 74 | 0 |
| University of Texas at Tyler | 197 | 173 | 0 | 24 |
| University of Texas of the Permian Basi | 53 | 52 | 1 | 0 |
| West Texas State University | 191 | 129 | 18 | 44 |
| **Mountain** | 27,519 | 17,776 | 6,914 | 2,829 |
| **Arizona** | 7,552 | 4,763 | 2,100 | 689 |
| Arizona State University | 3,222 | 1,579 | 1,341 | 302 |
| Northern Arizona University | 953 | 817 | 0 | 136 |
| University of Arizona | 3,377 | 2,367 | 759 | 251 |
| **Colorado** | 8,554 | 5,400 | 2,168 | 986 |
| Colorado School of Mines | 679 | 474 | 205 | 0 |
| Colorado State University | 1,870 | 1,257 | 392 | 221 |
| National Technological University | 487 | 100 | 387 | 0 |
| University of Colorado | 4,198 | 2,450 | 1,176 | 572 |
| University of Denver | 981 | 929 | 8 | 44 |
| University of Northern Colorado | 339 | 190 | 0 | 149 |
| **Idaho** | 1,560 | 969 | 406 | 185 |
| Idaho State University | 512 | 254 | 73 | 185 |
| University of Idaho | 1,048 | 715 | 333 | 0 |
| **Montana** | 1,084 | 864 | 150 | 70 |
| Montana College Mineral Sci & Technolog | 91 | 5 | 70 | 16 |
| Montana State University | 483 | 373 | 80 | 30 |
| University of Montana | 510 | 486 | 0 | 24 |
| **Nevada** | 1,183 | 786 | 277 | 120 |
| University of Nevada at Las Vegas | 311 | 191 | 75 | 45 |
| University of Nevada at Reno | 872 | 595 | 202 | 75 |
| **New Mexico** | 2,945 | 1,939 | 788 | 218 |
| Eastern New Mexico University | 99 | 88 | 0 | 11 |
| New Mexico Highlands University | 57 | 57 | 0 | 0 |
| New Mexico Institute of Mining and Tech | 245 | 187 | 58 | 0 |
| New Mexico State University | 883 | 611 | 265 | 7 |
| University of New Mexico | 1,661 | 996 | 465 | 200 |
| **Utah** | 3,790 | 2,447 | 899 | 444 |
| Brigham Young University | 680 | 504 | 145 | 31 |
| University of Utah | 1,876 | 1,082 | 445 | 349 |
| Utah State University | 1,234 | 861 | 309 | 64 |
| **Wyoming** | 851 | 608 | 126 | 117 |
| University of Wyoming | 851 | 608 | 126 | 117 |
| **Pacific** | 72,177 | 46,460 | 18,220 | 7,497 |
| **Alaska** | 680 | 454 | 200 | 26 |
| University of Alaska Southeast | 20 | 20 | 0 | 0 |
| University of Alaska at Anchorage | 173 | 49 | 98 | 26 |
| University of Alaska at Fairbanks | 487 | 385 | 102 | 0 |
| **California** | 59,033 | 37,394 | 15,547 | 6,092 |
| Azusa Pacific University | 260 | 183 | 0 | 77 |
| Biola University | 190 | 190 | 0 | 0 |
| Calif Poly State Univ at San Luis Obisp | 344 | 226 | 118 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

Page 10 of 11

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engi-neering, total | Health fields |
|---|---|---|---|---|
| **California, continued** | | | | |
| Calif Sch of Prof Psych - Fresno | 251 | 251 | 0 | 0 |
| Calif Sch of Prof Psych - Los Angeles | 585 | 585 | 0 | 0 |
| Calif Sch of Prof Psych - San Diego | 519 | 519 | 0 | 0 |
| Calif Sch of Prof Psych-Berkeley/Alamed | 512 | 512 | 0 | 0 |
| Calif State Polytechnic Univ at Pomona | 471 | 314 | 157 | 0 |
| Calif State Univ at Dominguez Hills | 462 | 397 | 65 | 0 |
| Calif State Univ at Fullerton | 1,089 | 735 | 279 | 75 |
| Calif State Univ at Hayward | 857 | 792 | 0 | 65 |
| Calif State Univ at Long Beach | 2,209 | 1,163 | 710 | 336 |
| Calif State Univ at Los Angeles | 1,090 | 662 | 144 | 284 |
| Calif State Univ at San Bernardino | 186 | 156 | 0 | 30 |
| Calif State Univ of Stanislaus | 114 | 114 | 0 | 0 |
| Calif State University at Chico | 491 | 423 | 12 | 56 |
| Calif State University at Fresno | 639 | 490 | 13 | 136 |
| Calif State University at Northridge | 1,436 | 629 | 605 | 202 |
| Calif State University at Sacramento | 863 | 509 | 221 | 133 |
| California Institute of Integral Studie | 250 | 250 | 0 | 0 |
| California Institute of Technology | 1,088 | 669 | 419 | 0 |
| California State Univ - Bakersfield | 161 | 112 | 0 | 49 |
| Chapman College | 260 | 181 | 0 | 79 |
| Charles R. Drew Univ of Medicine & Sci | 0 | 0 | 0 | 0 |
| Claremont Univ Center & Graduate School | 511 | 511 | 0 | 0 |
| Dominican College of San Rafael | 107 | 107 | 0 | 0 |
| Fuller Theological Seminary | 338 | 338 | 0 | 0 |
| Golden Gate University | 354 | 354 | 0 | 0 |
| Harvey Mudd College | 7 | 0 | 7 | 0 |
| Humboldt State University | 305 | 250 | 44 | 11 |
| John F Kennedy University | 800 | 771 | 0 | 29 |
| Loma Linda University | 459 | 92 | 0 | 367 |
| Loyola Marymount University | 221 | 144 | 77 | 0 |
| National University | 507 | 353 | 154 | 0 |
| Northrop University | 323 | 138 | 185 | 0 |
| Occidental College | 1 | 1 | 0 | 0 |
| Pacific Grad School of Prof Psych | 368 | 368 | 0 | 0 |
| Pacific States University | 20 | 0 | 20 | 0 |
| Pepperdine University | 731 | 731 | 0 | 0 |
| Rand Graduate School of Policy Studies | 48 | 48 | 0 | 0 |
| San Diego State University | 2,037 | 1,190 | 294 | 553 |
| San Francisco State University | 1,007 | 868 | 0 | 139 |
| San Jose State University | 1,913 | 911 | 729 | 273 |
| Santa Clara University | 1,293 | 523 | 770 | 0 |
| Sonoma State University | 196 | 152 | 0 | 44 |
| Stanford University | 4,275 | 1,961 | 2,277 | 37 |
| The Fielding Institute | 473 | 473 | 0 | 0 |
| The Wright Institute | 207 | 207 | 0 | 0 |
| US International University | 519 | 519 | 0 | 0 |
| US Naval Postgraduate School | 1,361 | 614 | 747 | 0 |
| University of Calif at Berkeley | 5,274 | 3,128 | 1,655 | 491 |
| University of Calif at Davis | 2,717 | 2,107 | 597 | 13 |
| University of Calif at Irvine | 1,279 | 934 | 305 | 40 |
| University of Calif at Los Angeles | 4,523 | 2,409 | 1,029 | 1,085 |
| University of Calif at Riverside | 711 | 711 | 0 | 0 |
| University of Calif at San Diego | 1,941 | 1,479 | 352 | 110 |
| University of Calif at San Francisco | 1,063 | 391 | 27 | 645 |
| University of Calif at Santa Barbara | 1,525 | 1,025 | 450 | 50 |
| University of Calif at Santa Cruz | 698 | 659 | 39 | 0 |
| University of La Verne | 141 | 141 | 0 | 0 |
| University of Redlands | 28 | 0 | 0 | 28 |
| University of San Diego | 188 | 52 | 0 | 136 |
| University of San Francisco | 147 | 60 | 87 | 0 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 22. Graduate students in the science, engineering, and health fields in all institutions by geographic division, State, institution, and area of study: 1990

Page 11 of 11

| Division, State, and institution | Total, all surveyed fields | Sciences, total | Engineering, total | Health fields |
|---|---|---|---|---|
| **California, continued** | | | | |
| University of Southern California | 5,707 | 2,561 | 2,745 | 401 |
| University of the Pacific | 144 | 42 | 4 | 98 |
| West Coast University | 309 | 99 | 210 | 0 |
| **Hawaii** | 1,984 | 1,419 | 210 | 355 |
| University of Hawaii at Manoa | 1,984 | 1,419 | 210 | 355 |
| **Oregon** | 3,851 | 2,892 | 760 | 199 |
| Oregon Grad Inst of Science & Technolog | 188 | 125 | 63 | 0 |
| Oregon Health Sciences University | 103 | 102 | 0 | 1 |
| Oregon State University | 1,795 | 1,278 | 437 | 80 |
| Pacific University | 6 | 0 | 0 | 6 |
| Portland State University | 918 | 583 | 249 | 86 |
| Southern Oregon State College | 28 | 28 | 0 | 0 |
| University of Oregon | 776 | 776 | 0 | 0 |
| University of Portland | 37 | 0 | 11 | 26 |
| **Washington** | 6,629 | 4,301 | 1,503 | 825 |
| Central Washington University | 119 | 119 | 0 | 0 |
| Eastern Washington University | 244 | 220 | 0 | 24 |
| Gonzaga University | 10 | 0 | 10 | 0 |
| Pacific Lutheran University | 69 | 58 | 0 | 11 |
| Saint Martin's College | 18 | 0 | 18 | 0 |
| Seattle University | 243 | 129 | 114 | 0 |
| University of Washington | 4,335 | 2,638 | 1,099 | 598 |
| Walla Walla College | 3 | 3 | 0 | 0 |
| Washington State University | 1,271 | 897 | 262 | 112 |
| Western Washington University | 306 | 237 | 0 | 69 |
| Whitworth College | 11 | 0 | 0 | 11 |
| **Outlying Areas** | 2,539 | 1,661 | 109 | 769 |
| **Guam** | 0 | 0 | 0 | 0 |
| University of Guam | 0 | 0 | 0 | 0 |
| **Puerto Rico** | 2,539 | 1,661 | 109 | 769 |
| Caribbean Center for Advanced Studies | 216 | 216 | 0 | 0 |
| Catholic University of Puerto Rico | 54 | 0 | 0 | 54 |
| Ponce School of Medicine | 19 | 19 | 0 | 0 |
| University of Puerto Rico | 358 | 249 | 109 | 0 |
| University of Puerto Rico - Rio Piedras | 1,235 | 1,100 | 0 | 135 |
| University of Puerto Rico Med Sci Campu | 657 | 77 | 0 | 580 |

NOTE: Includes medical schools.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

## Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| Total, all institutions | 342,956 | 346,264 | 355,875 | 366,927 | 372,101 | 377,360 | 384,014 | 398,405 |
| 1 University of Southern California | 8,058 | 7,046 | 8,051 | 7,866 | 7,474 | 7,034 | 6,397 | 5,707 |
| 2 University of Minnesota | 5,109 | 5,223 | 5,595 | 5,526 | 5,320 | 5,479 | 5,607 | 5,610 |
| 3 University of Wisconsin - Madison | 5,247 | 5,411 | 5,229 | 5,229 | 5,288 | 5,387 | 5,571 | 5,746 |
| 4 Ohio State University | 4,664 | 4,575 | 4,739 | 5,050 | 5,088 | 5,178 | 5,133 | 5,188 |
| 5 University of Calif at Berkeley | 5,150 | 5,300 | 5,207 | 5,297 | 5,337 | 5,099 | 5,057 | 5,274 |
| 6 University of Michigan | 4,437 | 4,458 | 4,559 | 4,672 | 4,882 | 4,883 | 5,079 | 5,284 |
| 7 University of Illinois at Urbana | 4,392 | 4,153 | 4,470 | 4,693 | 4,854 | 4,805 | 4,792 | 4,894 |
| 8 George Washington University | 3,388 | 3,664 | 3,532 | 4,372 | 4,609 | 4,623 | 4,190 | 4,426 |
| 9 Univ of Texas at Austin | 4,465 | 4,464 | 4,641 | 4,688 | 4,390 | 4,420 | 4,436 | 4,717 |
| 10 Texas A & M University | 3,907 | 3,929 | 3,795 | 4,019 | 4,194 | 4,409 | 4,635 | 4,927 |
| Total, 1st 10 insts. | 48,817 | 48,223 | 49,818 | 51,410 | 51,436 | 51,317 | 50,897 | 51,773 |
| 11 University of Calif at Los Angeles | 4,198 | 4,107 | 4,214 | 4,201 | 4,270 | 4,356 | 4,427 | 4,523 |
| 12 University of Washington | 3,904 | 4,165 | 4,234 | 4,115 | 4,134 | 4,255 | 4,172 | 4,335 |
| 13 Pennsylvania State University | 3,557 | 3,628 | 3,781 | 4,129 | 4,046 | 4,245 | 4,348 | 4,700 |
| 14 Stanford University | 4,297 | 4,134 | 4,135 | 4,050 | 4,157 | 4,147 | 4,177 | 4,275 |
| 15 Purdue University | 4,293 | 3,556 | 3,622 | 3,725 | 3,851 | 4,058 | 4,040 | 3,915 |
| 16 Rutgers the State University | 4,159 | 3,985 | 4,034 | 4,163 | 4,036 | 4,018 | 4,093 | 4,249 |
| 17 Massachusetts Institute of Technology | 4,013 | 3,996 | 4,045 | 4,065 | 3,962 | 3,951 | 4,165 | 4,245 |
| 18 University of Maryland - College Park | 3,198 | 3,333 | 3,439 | 3,515 | 3,592 | 3,684 | 3,860 | 3,931 |
| 19 University of Colorado | 3,187 | 3,070 | 3,207 | 3,430 | 3,658 | 3,681 | 3,864 | 4,198 |
| 20 University of Pittsburgh | 4,157 | 4,203 | 3,858 | 3,756 | 3,819 | 3,679 | 3,635 | 3,852 |
| Total, 1st 20 insts. | 87,778 | 86,400 | 88,387 | 90,559 | 90,961 | 91,391 | 91,678 | 93,996 |
| 21 University of Arizona | 3,276 | 3,435 | 3,582 | 3,752 | 3,631 | 3,629 | 3,474 | 3,377 |
| 22 Cornell University | 2,991 | 3,007 | 3,103 | 3,361 | 3,365 | 3,386 | 3,416 | 3,408 |
| 23 University of Florida | 2,849 | 3,049 | 3,244 | 3,305 | 3,223 | 3,293 | 3,371 | 3,588 |
| 24 University of Massachusetts | 2,369 | 2,458 | 2,596 | 2,669 | 2,616 | 3,178 | 3,130 | 3,251 |
| 25 Harvard University | 2,842 | 3,013 | 3,216 | 3,266 | 2,975 | 3,163 | 3,069 | 3,231 |
| 26 SUNY - Buffalo | 2,338 | 2,838 | 2,738 | 2,823 | 3,063 | 3,150 | 3,125 | 3,316 |
| 27 Virginia Polytechnic Inst and State Uni | 2,532 | 2,815 | 3,497 | 3,497 | 3,430 | 3,086 | 3,227 | 3,275 |
| 28 North Carolina State Univ at Raleigh | 2,634 | 2,729 | 2,690 | 2,964 | 2,883 | 3,031 | 3,114 | 3,045 |
| 29 Arizona State University | 2,246 | 2,219 | 2,435 | 2,470 | 2,618 | 2,896 | 3,165 | 3,222 |
| 30 Columbia University Main Division | 2,993 | 3,020 | 3,065 | 3,126 | 2,990 | 2,895 | 2,945 | 2,942 |
| Total, 1st 30 insts. | 114,848 | 114,983 | 118,553 | 121,792 | 121,755 | 123,098 | 123,714 | 126,651 |
| 31 New York University | 3,853 | 3,322 | 3,680 | 3,200 | 3,152 | 2,856 | 3,142 | 3,161 |
| 32 Michigan State University | 3,003 | 2,897 | 2,868 | 3,087 | 2,947 | 2,845 | 3,051 | 2,993 |
| 33 University of Illinois at Chicago | 2,530 | 2,708 | 2,638 | 2,813 | 2,728 | 2,835 | 3,076 | 3,121 |
| 34 Iowa State University of Sci & Tech | 2,597 | 2,491 | 2,578 | 2,619 | 2,659 | 2,714 | 2,680 | 2,755 |
| 35 Georgia Institute of Technology | 2,009 | 2,339 | 2,271 | 2,526 | 2,666 | 2,677 | 2,766 | 2,972 |
| 36 Univ of North Carolina at Chapel Hill | 2,427 | 2,395 | 2,420 | 2,559 | 2,692 | 2,669 | 2,963 | 3,066 |
| 37 Indiana University | 2,353 | 2,411 | 1,869 | 2,513 | 2,630 | 2,629 | 3,473 | 3,914 |
| 38 New Jersey Institute of Technology | 918 | 1,655 | 1,907 | 2,104 | 2,419 | 2,658 | 2,647 | 2,283 |
| 39 Wayne State University | 2,149 | 2,255 | 2,333 | 2,491 | 2,482 | 2,626 | 2,930 | 3,155 |
| 40 University of Calif at Davis | 2,557 | 2,571 | 2,662 | 2,744 | 2,608 | 2,587 | 2,668 | 2,717 |
| Total, 1st 40 insts. | 139,244 | 140,025 | 143,785 | 148,454 | 148,738 | 150,222 | 153,108 | 156,788 |
| 41 University of Tennessee at Knoxville | 2,480 | 2,389 | 2,419 | 2,466 | 2,368 | 2,535 | 2,735 | 2,668 |
| 42 University of Cincinnati | 2,390 | 2,406 | 2,364 | 2,389 | 2,348 | 2,421 | 2,432 | 2,576 |
| 43 University of Pennsylvania | 2,573 | 2,436 | 2,523 | 2,510 | 2,437 | 2,415 | 2,521 | 2,526 |
| 44 Louisiana State University System | 2,560 | 2,573 | 2,490 | 2,399 | 2,464 | 2,407 | 2,340 | 2,567 |
| 45 Northeastern University | 2,539 | 2,825 | 2,699 | 2,598 | 2,435 | 2,359 | 2,261 | 2,414 |
| 46 SUNY - Stony Brook | 2,035 | 1,998 | 2,026 | 2,109 | 2,194 | 2,321 | 2,290 | 2,305 |
| 47 University of Connecticut | 2,004 | 1,966 | 2,025 | 2,163 | 2,270 | 2,282 | 2,290 | 2,510 |
| 48 University of Oklahoma | 2,077 | 2,094 | 2,165 | 2,181 | 2,364 | 2,225 | 2,270 | 2,472 |
| 49 Boston University | 2,121 | 2,096 | 2,241 | 2,359 | 2,361 | 2,211 | 2,229 | 2,349 |
| 50 Syracuse University | 2,227 | 2,292 | 2,108 | 2,188 | 2,138 | 2,195 | 2,155 | 2,155 |
| Total, 1st 50 insts. | 163,050 | 163,100 | 166,845 | 171,814 | 172,137 | 173,593 | 176,581 | 181,327 |
| 51 University of Iowa | 1,955 | 1,927 | 1,972 | 2,084 | 2,068 | 2,171 | 2,140 | 2,301 |
| 52 University of Kansas | 2,387 | 2,215 | 2,126 | 2,049 | 2,041 | 2,091 | 2,191 | 2,257 |
| 53 University of Lowell | 1,408 | 1,738 | 1,805 | 1,932 | 2,151 | 2,088 | 1,582 | 2,070 |
| 54 CUNY Graduate School and Univ Center | 1,748 | 1,767 | 1,665 | 1,853 | 2,026 | 2,047 | 2,055 | 2,068 |
| 55 Polytechnic University | 1,540 | 1,753 | 1,929 | 2,324 | 2,066 | 2,028 | 2,030 | 1,976 |
| 56 Columbia University Teachers College | 1,400 | 1,713 | 1,733 | 1,728 | 1,751 | 1,987 | 1,886 | 1,928 |
| 57 Case Western Reserve University | 1,779 | 1,848 | 1,921 | 1,947 | 2,243 | 1,986 | 1,702 | 1,801 |
| 58 San Diego State University | 1,624 | 1,586 | 1,885 | 1,893 | 1,992 | 1,960 | 2,100 | 2,037 |
| 59 Yale University | 1,666 | 1,577 | 1,791 | 1,861 | 1,926 | 1,938 | 1,931 | 1,934 |
| 60 Northwestern University | 1,622 | 1,665 | 1,743 | 1,722 | 1,838 | 1,905 | 1,971 | 1,920 |
| Total, 1st 60 insts. | 180,177 | 180,879 | 185,433 | 191,217 | 192,239 | 193,794 | 196,187 | 201,619 |

See explanatory information, if any, and SOURCE(S) at end of table.

# Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

Page 2 of 6

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| 61 George Mason University | 502 | 781 | 1,065 | 1,221 | 1,566 | 1,903 | 2,050 | 2,275 |
| 62 Texas Woman's University | 1,965 | 1,977 | 1,928 | 1,976 | 1,864 | 1,883 | 2,044 | 1,744 |
| 63 Univ of Texas at Arlington | 1,621 | 1,787 | 1,806 | 1,858 | 1,874 | 1,882 | 1,910 | 2,001 |
| 64 Colorado State University | 1,807 | 1,736 | 1,722 | 1,756 | 1,806 | 1,870 | 1,864 | 1,870 |
| 65 University of Missouri - Columbia | 1,753 | 1,925 | 1,890 | 1,951 | 1,888 | 1,849 | 1,833 | 1,983 |
| 66 University of Virginia | 1,539 | 1,631 | 1,763 | 1,848 | 1,877 | 1,846 | 1,688 | 1,906 |
| 67 University of Hawaii at Manoa | 1,782 | 1,702 | 1,705 | 1,820 | 1,822 | 1,829 | 1,857 | 1,984 |
| 68 University of Kentucky | 1,539 | 1,640 | 1,641 | 1,643 | 1,689 | 1,764 | 1,890 | 1,906 |
| 69 University of Chicago | 1,421 | 1,427 | 1,503 | 1,625 | 1,741 | 1,757 | 1,969 | 2,016 |
| 70 University of Utah | 1,831 | 1,829 | 1,878 | 1,900 | 1,879 | 1,754 | 1,808 | 1,876 |
| Total, 1st 70 insts. | 195,959 | 197,312 | 202,334 | 208,814 | 210,243 | 212,131 | 215,100 | 221,180 |
| 71 Oregon State University | 1,657 | 1,732 | 1,673 | 1,797 | 1,779 | 1,740 | 1,722 | 1,795 |
| 72 University of South Carolina | 1,661 | 1,671 | 1,620 | 1,829 | 1,895 | 1,708 | 1,858 | 1,874 |
| 73 University of Wisconsin - Milwaukee | 1,671 | 1,620 | 1,628 | 1,630 | 1,691 | 1,698 | 1,709 | 1,747 |
| 74 University of South Florida | 1,046 | 986 | 1,155 | 1,304 | 1,259 | 1,688 | 1,817 | 2,158 |
| 75 Rensselaer Polytechnic Institute | 1,825 | 1,822 | 1,761 | 1,841 | 1,778 | 1,668 | 1,795 | 1,770 |
| 76 Stevens Institute of Technology | 1,086 | 1,455 | 1,573 | 1,622 | 1,642 | 1,666 | 1,435 | 1,333 |
| 77 University of Houston-University Park | 1,686 | 1,486 | 1,622 | 1,895 | 1,828 | 1,655 | 2,082 | 2,578 |
| 78 Illinois Institute of Technology | 1,786 | 1,745 | 1,781 | 1,583 | 1,632 | 1,654 | 1,510 | 1,776 |
| 79 Johns Hopkins University | 1,495 | 1,392 | 1,512 | 1,528 | 1,484 | 1,647 | 1,694 | 1,756 |
| 80 Santa Clara University | 1,310 | 1,422 | 1,580 | 1,665 | 1,619 | 1,642 | 1,494 | 1,293 |
| Total, 1st 80 insts. | 211,174 | 212,646 | 218,239 | 225,508 | 226,850 | 228,897 | 232,216 | 239,280 |
| 81 Southern Illinois Univ at Carbondale | 1,288 | 1,289 | 1,433 | 1,512 | 1,656 | 1,626 | 1,599 | 1,565 |
| 82 University of New Mexico | 1,540 | 1,456 | 1,533 | 1,556 | 1,665 | 1,623 | 1,551 | 1,661 |
| 83 University of Calif at San Diego | 1,261 | 1,303 | 1,404 | 1,528 | 1,616 | 1,571 | 1,702 | 1,961 |
| 84 Carnegie-Mellon University | 1,146 | 1,198 | 1,419 | 1,535 | 1,512 | 1,563 | 1,609 | 1,657 |
| 85 Oklahoma State University | 1,479 | 1,427 | 1,439 | 1,529 | 1,577 | 1,543 | 1,690 | 1,721 |
| 86 Long Island University | 1,945 | 1,996 | 1,500 | 1,655 | 1,534 | 1,537 | 1,260 | 1,503 |
| 87 University of Georgia | 1,532 | 1,555 | 1,436 | 1,465 | 1,576 | 1,525 | 1,501 | 1,653 |
| 88 University of Akron | 1,135 | 1,225 | 1,337 | 1,398 | 1,448 | 1,505 | 1,526 | 1,593 |
| 89 Kansas State University | 1,331 | 1,377 | 1,345 | 1,409 | 1,450 | 1,505 | 1,533 | 1,532 |
| 90 University of Nebraska - Lincoln | 1,462 | 1,431 | 1,359 | 1,351 | 1,407 | 1,415 | 1,457 | 1,550 |
| Total, 1st 90 insts. | 225,268 | 226,903 | 232,444 | 240,446 | 242,291 | 244,307 | 247,644 | 255,656 |
| 91 Virginia Commonwealth University | 969 | 974 | 998 | 1,168 | 1,301 | 1,412 | 1,498 | 1,712 |
| 92 Clemson University | 1,119 | 1,173 | 1,226 | 1,311 | 1,333 | 1,396 | 1,451 | 1,500 |
| 93 Western Michigan University | 1,161 | 1,282 | 1,253 | 1,365 | 1,540 | 1,392 | 1,342 | 1,479 |
| 94 Auburn University | 984 | 1,098 | 1,227 | 1,303 | 1,340 | 1,391 | 1,517 | 1,699 |
| 95 The University of Alabama at Birmingham | 878 | 897 | 980 | 1,120 | 1,270 | 1,387 | 1,449 | 1,499 |
| 96 Washington University | 1,068 | 1,038 | 1,080 | 1,200 | 1,325 | 1,377 | 1,437 | 1,593 |
| 97 The American University | 1,459 | 1,443 | 1,720 | 1,600 | 1,645 | 1,371 | 1,476 | 1,559 |
| 98 West Virginia University | 1,517 | 1,498 | 1,412 | 1,339 | 1,242 | 1,352 | 1,396 | 1,522 |
| 99 University of Rochester | 1,098 | 1,169 | 1,226 | 1,271 | 1,276 | 1,354 | 1,376 | 1,411 |
| 100 US Naval Postgraduate School | 1,266 | 1,171 | 1,302 | 1,260 | 1,204 | 1,331 | 1,349 | 1,361 |
| Total, 1st 100 insts. | 236,787 | 238,645 | 244,864 | 253,363 | 255,767 | 258,050 | 261,935 | 270,991 |
| 101 University of Calif at Santa Barbara | 1,218 | 1,344 | 1,347 | 1,348 | 1,401 | 1,328 | 1,440 | 1,525 |
| 102 Drexel University | 1,102 | 1,208 | 1,336 | 1,325 | 1,391 | 1,318 | 1,276 | 1,410 |
| 103 Duke University | 961 | 976 | 1,060 | 1,166 | 1,216 | 1,283 | 1,299 | 1,388 |
| 104 Washington State University | 1,367 | 1,411 | 1,440 | 1,398 | 1,363 | 1,276 | 1,191 | 1,371 |
| 105 De Paul University | 1,095 | 969 | 1,159 | 1,191 | 1,398 | 1,273 | 1,400 | 1,344 |
| 106 Princeton University | 1,123 | 1,137 | 1,164 | 1,177 | 1,182 | 1,248 | 1,327 | 1,335 |
| 107 University of Missouri - Rolla | 1,068 | 1,095 | 1,159 | 1,246 | 1,282 | 1,239 | 1,231 | 1,324 |
| 108 Temple University | 1,223 | 1,243 | 1,242 | 1,158 | 1,203 | 1,237 | 1,457 | 1,505 |
| 109 Florida State University | 1,216 | 1,112 | 1,137 | 1,190 | 1,110 | 1,219 | 1,425 | 1,483 |
| 110 University of North Texas | 1,274 | 1,400 | 1,244 | 1,202 | 1,158 | 1,218 | 1,221 | 1,206 |
| Total, 1st 110 insts. | 248,344 | 250,539 | 257,152 | 265,821 | 268,367 | 270,689 | 275,202 | 284,782 |
| 111 University of Rhode Island | 1,102 | 1,091 | 1,126 | 1,196 | 1,286 | 1,217 | 1,278 | 1,310 |
| 112 Utah State University | 1,065 | 1,207 | 1,078 | 1,207 | 1,163 | 1,213 | 1,247 | 1,234 |
| 113 Nova University | 436 | 476 | 720 | 436 | 1,260 | 1,202 | 1,267 | 923 |
| 114 University of Delaware | 1,180 | 1,112 | 1,150 | 1,189 | 1,303 | 1,198 | 1,239 | 1,357 |
| 115 University of Miami | 1,024 | 1,024 | 1,106 | 1,080 | 1,176 | 1,196 | 1,157 | 1,213 |
| 116 Pace University | 1,026 | 1,153 | 1,079 | 1,375 | 1,223 | 1,164 | 1,217 | 1,211 |
| 117 University of Calif at Irvine | 868 | 931 | 992 | 1,027 | 1,109 | 1,161 | 1,215 | 1,212 |
| 118 SUNY - Binghamton | 1,128 | 1,137 | 1,159 | 1,131 | 1,106 | 1,161 | 1,199 | 1,182 |
| 119 Antioch University | 965 | 0 | 0 | 0 | 0 | 1,133 | 1,019 | 1,146 |
| 120 University of Louisville | 1,115 | 1,053 | 966 | 977 | 1,038 | 1,126 | 1,141 | 1,115 |
| Total, 1st 120 insts. | 258,891 | 259,723 | 266,528 | 275,439 | 279,029 | 282,460 | 287,161 | 296,895 |

See explanatory information, if any, and SOURCE(S) at end of table.

# Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

Page 3 of 6

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| 121 Cleveland State University | 964 | 993 | 989 | 940 | 1,008 | 1,104 | 1,060 | 1,099 |
| 122 Old Dominion University | 991 | 931 | 906 | 950 | 986 | 1,091 | 1,104 | 1,195 |
| 123 Univ of Texas at Dallas | 842 | 898 | 946 | 963 | 975 | 1,088 | 1,169 | 1,233 |
| 124 New School for Social Research | 1,430 | 1,328 | 1,273 | 1,135 | 1,103 | 1,080 | 1,066 | 984 |
| 125 SUNY - Albany | 843 | 843 | 1,123 | 1,153 | 1,168 | 1,077 | 1,088 | 1,264 |
| 126 Mississippi State University | 973 | 1,014 | 949 | 927 | 1,044 | 1,075 | 1,090 | 1,087 |
| 127 University of Central Florida | 814 | 971 | 1,062 | 1,113 | 1,151 | 1,052 | 1,047 | 1,216 |
| 128 Texas Tech University | 1,089 | 1,140 | 1,143 | 1,071 | 1,077 | 1,044 | 1,167 | 1,293 |
| 129 University of Puerto Rico - Rio Piedras | 1,105 | 1,239 | 1,263 | 1,265 | 1,135 | 1,041 | 1,097 | 1,235 |
| 130 Worcester Polytechnic Institute | 932 | 1,045 | 1,047 | 1,114 | 1,016 | 1,035 | 984 | 878 |
| Total, 1st 130 insts. | 268,874 | 270,125 | 277,229 | 286,070 | 289,692 | 293,147 | 298,033 | 308,379 |
| 131 University of Calif at San Francisco | 876 | 856 | 873 | 949 | 994 | 1,033 | 1,037 | 1,083 |
| 132 California Institute of Technology | 946 | 995 | 998 | 992 | 965 | 1,010 | 1,065 | 1,088 |
| 133 Ohio University | 866 | 1,007 | 897 | 930 | 998 | 1,000 | 986 | 1,004 |
| 134 Florida Institute of Technology | 928 | 954 | 1,025 | 1,053 | 1,103 | 999 | 1,024 | 894 |
| 135 Fairleigh Dickinson University | 1,275 | 1,241 | 1,252 | 794 | 1,027 | 993 | 859 | 912 |
| 136 Tufts University | 571 | 668 | 765 | 744 | 858 | 986 | 1,006 | 1,037 |
| 137 Georgia State University | 952 | 1,025 | 886 | 926 | 928 | 984 | 1,068 | 1,111 |
| 138 Catholic University of America | 1,035 | 1,081 | 1,081 | 1,037 | 1,032 | 980 | 916 | 940 |
| 139 Lehigh University | 965 | 932 | 964 | 1,017 | 944 | 974 | 1,018 | 764 |
| 140 Southern Methodist University | 892 | 802 | 736 | 770 | 895 | 974 | 952 | 901 |
| Total, 1st 140 insts. | 278,176 | 279,686 | 286,704 | 295,282 | 299,436 | 303,080 | 307,964 | 318,113 |
| 141 Northern Illinois University | 906 | 830 | 829 | 883 | 905 | 973 | 977 | 1,116 |
| 142 Villanova University | 1,016 | 982 | 1,001 | 1,061 | 979 | 958 | 902 | 844 |
| 143 New York Institute of Technology | 664 | 949 | 898 | 928 | 884 | 948 | 961 | 939 |
| 144 Tulane University of Louisiana | 941 | 850 | 893 | 905 | 893 | 931 | 947 | 1,009 |
| 145 Wright State University | 677 | 701 | 743 | 759 | 861 | 921 | 961 | 993 |
| 146 Kent State University | 794 | 842 | 880 | 899 | 901 | 911 | 961 | 1,029 |
| 147 Wichita State University | 709 | 775 | 756 | 772 | 896 | 905 | 881 | 972 |
| 148 New Mexico State University | 802 | 792 | 793 | 843 | 900 | 903 | 856 | 883 |
| 149 CUNY City College | 928 | 710 | 762 | 1,059 | 896 | 894 | 716 | 854 |
| 150 University of Idaho | 771 | 776 | 775 | 778 | 837 | 887 | 960 | 1,048 |
| Total, 1st 150 insts. | 286,384 | 287,893 | 295,034 | 304,169 | 308,388 | 312,311 | 317,086 | 327,800 |
| 151 Georgetown University | 990 | 874 | 1,251 | 1,259 | 1,022 | 884 | 886 | 703 |
| 152 Brigham Young University | 887 | 885 | 1,030 | 1,047 | 1,001 | 883 | 707 | 680 |
| 153 Adelphi University | 1,018 | 1,067 | 1,012 | 971 | 902 | 871 | 943 | 947 |
| 154 Howard University | 831 | 1,059 | 947 | 842 | 896 | 868 | 751 | 781 |
| 155 University of Arkansas | 980 | 984 | 971 | 943 | 958 | 858 | 857 | 911 |
| 156 Vanderbilt University | 682 | 709 | 753 | 739 | 795 | 839 | 1,001 | 996 |
| 157 University of Maryland - Baltimore Cnty | 358 | 396 | 419 | 563 | 507 | 831 | 835 | 913 |
| 158 University of Dayton | 543 | 576 | 654 | 806 | 947 | 830 | 775 | 871 |
| 159 University of Maryland - Balt Prof Sch | 749 | 743 | 716 | 819 | 812 | 827 | 921 | 965 |
| 160 The University of Alabama in Huntsville | 334 | 517 | 609 | 627 | 742 | 826 | 940 | 1,099 |
| Total, 1st 160 insts. | 293,756 | 295,703 | 303,396 | 312,785 | 316,970 | 320,828 | 325,702 | 336,666 |
| 161 Marquette University | 639 | 631 | 708 | 766 | 828 | 819 | 814 | 815 |
| 162 Brown University | 749 | 743 | 737 | 797 | 788 | 801 | 785 | 769 |
| 163 University of Oregon | 779 | 762 | 737 | 740 | 754 | 794 | 776 | 776 |
| 164 Portland State University | 521 | 573 | 630 | 676 | 692 | 778 | 815 | 918 |
| 165 St. Louis University | 804 | 817 | 776 | 779 | 744 | 777 | 804 | 800 |
| 166 CUNY Hunter College | 755 | 833 | 913 | 843 | 786 | 774 | 749 | 809 |
| 167 Emory University | 513 | 709 | 704 | 763 | 752 | 769 | 852 | 1,013 |
| 168 University of Notre Dame | 663 | 672 | 667 | 658 | 672 | 755 | 756 | 807 |
| 169 Golden Gate University | 139 | 775 | 691 | 593 | 847 | 754 | 618 | 354 |
| 170 Rice University | 689 | 740 | 757 | 795 | 840 | 750 | 789 | 800 |
| Total, 1st 170 insts. | 300,007 | 302,958 | 310,756 | 320,173 | 324,673 | 328,599 | 333,460 | 344,527 |
| 171 Univ of Texas Hlth Sci Ctr at Houston | 666 | 670 | 655 | 690 | 703 | 749 | 832 | 919 |
| 172 University of Missouri - Kansas City | 620 | 518 | 629 | 718 | 866 | 745 | 768 | 812 |
| 173 Univ of Texas at El Paso | 666 | 777 | 737 | 676 | 703 | 738 | 701 | 766 |
| 174 Northern Arizona University | 625 | 558 | 726 | 612 | 689 | 729 | 804 | 953 |
| 175 Memphis State University | 859 | 865 | 963 | 979 | 820 | 721 | 767 | 898 |
| 176 The University of Alabama | 917 | 961 | 682 | 734 | 773 | 714 | 768 | 807 |
| 177 University of Mississippi | 540 | 580 | 566 | 640 | 601 | 709 | 750 | 739 |
| 178 University of Calif at Riverside | 744 | 732 | 769 | 727 | 735 | 701 | 672 | 711 |
| 179 Colorado School of Mines | 582 | 442 | 616 | 803 | 774 | 700 | 679 | 679 |
| 180 University of Wyoming | 835 | 779 | 813 | 740 | 739 | 697 | 802 | 851 |
| Total, 1st 180 insts. | 306,687 | 309,520 | 317,892 | 327,492 | 332,078 | 335,802 | 341,003 | 352,660 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

Page 4 of 6

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| 181 University of Denver | 756 | 771 | 731 | 663 | 652 | 691 | 644 | 981 |
| 182 Oakland University | 402 | 478 | 559 | 602 | 622 | 652 | 701 | 668 |
| 183 University of Vermont & St Agric Colleg | 634 | 661 | 618 | 630 | 605 | 650 | 618 | 625 |
| 184 University of Maine | 509 | 580 | 523 | 538 | 614 | 649 | 667 | 660 |
| 185 University of Nevada at Reno | 532 | 561 | 547 | 505 | 609 | 646 | 749 | 872 |
| 186 St John's University | 753 | 654 | 610 | 698 | 639 | 641 | 569 | 707 |
| 187 University of New Hampshire | 502 | 518 | 536 | 570 | 584 | 634 | 634 | 683 |
| 188 North Dakota State University | 581 | 555 | 589 | 614 | 574 | 620 | 615 | 560 |
| 189 University of Southern Mississippi | 488 | 606 | 657 | 683 | 610 | 605 | 661 | 603 |
| 190 Yeshiva University | 538 | 552 | 599 | 561 | 586 | 600 | 666 | 590 |
| Total, 1st 190 insts. | 312,382 | 315,456 | 323,861 | 333,556 | 338,173 | 342,190 | 347,527 | 359,609 |
| 191 Air Force Institute of Technology | 583 | 639 | 551 | 526 | 580 | 596 | 548 | 653 |
| 192 Bowling Green State University | 475 | 515 | 487 | 509 | 536 | 589 | 596 | 581 |
| 193 Loyola University of Chicago | 617 | 625 | 562 | 561 | 580 | 587 | 608 | 730 |
| 194 University of Toledo | 658 | 765 | 786 | 729 | 726 | 583 | 666 | 700 |
| 195 Florida International University | 27 | 0 | 0 | 0 | 0 | 581 | 710 | 772 |
| 196 Hofstra University | 386 | 350 | 516 | 507 | 553 | 580 | 599 | 549 |
| 197 University of Puerto Rico Med Sci Campu | 471 | 404 | 453 | 411 | 460 | 558 | 601 | 657 |
| 198 Illinois State University | 466 | 442 | 465 | 449 | 541 | 557 | 567 | 523 |
| 199 US International University | 610 | 513 | 540 | 630 | 613 | 547 | 497 | 519 |
| 200 Boston College | 481 | 498 | 511 | 523 | 521 | 538 | 614 | 623 |
| Total, 1st 200 insts. | 317,156 | 320,207 | 328,732 | 338,399 | 343,283 | 347,906 | 353,533 | 365,916 |
| 201 University of Detroit | 541 | 530 | 503 | 540 | 579 | 526 | 588 | 564 |
| 202 University of Nebraska - Omaha | 462 | 423 | 418 | 454 | 474 | 521 | 473 | 505 |
| 203 Montana State University | 508 | 493 | 510 | 476 | 461 | 520 | 515 | 483 |
| 204 Claremont Univ Center & Graduate School | 229 | 205 | 207 | 448 | 480 | 517 | 502 | 511 |
| 205 Florida Atlantic University | 555 | 438 | 446 | 475 | 499 | 512 | 490 | 742 |
| 206 Hahnemann University | 257 | 284 | 282 | 391 | 394 | 494 | 406 | 506 |
| 207 University of Southwestern Louisiana | 656 | 684 | 693 | 633 | 560 | 490 | 534 | 538 |
| 208 Loma Linda University | 649 | 512 | 649 | 537 | 453 | 489 | 464 | 459 |
| 209 Miami University | 536 | 494 | 521 | 505 | 546 | 477 | 454 | 468 |
| 210 Union Institute | 288 | 293 | 444 | 470 | 476 | 471 | 488 | 501 |
| Total, 1st 210 insts. | 321,837 | 324,563 | 333,405 | 343,328 | 348,205 | 352,923 | 358,447 | 371,193 |
| 211 Fordham University | 579 | 633 | 598 | 480 | 543 | 461 | 470 | 566 |
| 212 Calif Sch of Prof Psych-Berkeley/Alamed | 300 | 361 | 391 | 426 | 423 | 455 | 501 | 512 |
| 213 University of Calif at Santa Cruz | 375 | 403 | 433 | 455 | 462 | 455 | 555 | 608 |
| 214 Calif Sch of Prof Psych - Los Angeles | 266 | 330 | 424 | 428 | 438 | 452 | 501 | 585 |
| 215 Univ of North Carolina at Greensboro | 511 | 517 | 503 | 500 | 494 | 451 | 447 | 530 |
| 216 Rush University | 115 | 330 | 342 | 376 | 394 | 434 | 487 | 471 |
| 217 Calif Sch of Prof Psych - San Diego | 322 | 389 | 401 | 415 | 430 | 434 | 480 | 519 |
| 218 The Fielding Institute | 380 | 436 | 449 | 447 | 471 | 434 | 470 | 473 |
| 219 South Dakota State University | 397 | 386 | 432 | 431 | 431 | 429 | 461 | 493 |
| 220 SUNY - Coll of Env Science and Forestry | 431 | 382 | 384 | 418 | 399 | 429 | 482 | 527 |
| Total, 1st 220 insts. | 325,513 | 328,730 | 337,762 | 347,704 | 352,690 | 357,357 | 363,281 | 376,477 |
| 221 University of Montana | 511 | 537 | 470 | 435 | 430 | 421 | 456 | 510 |
| 222 University of Northern Colorado | 79 | 133 | 192 | 456 | 552 | 419 | 262 | 339 |
| 223 Michigan Technological University | 319 | 350 | 334 | 383 | 398 | 417 | 442 | 464 |
| 224 University of Alaska at Fairbanks | 424 | 352 | 381 | 399 | 387 | 406 | 444 | 487 |
| 225 University of South Alabama | 229 | 229 | 261 | 305 | 345 | 392 | 453 | 494 |
| 226 New York Medical College | 264 | 359 | 380 | 344 | 386 | 391 | 290 | 257 |
| 227 Atlanta University | 421 | 411 | 436 | 425 | 406 | 389 | 0 | 0 |
| 228 Brandeis University | 318 | 314 | 311 | 342 | 366 | 375 | 392 | 416 |
| 229 University of Puerto Rico | 310 | 395 | 415 | 427 | 397 | 374 | 364 | 358 |
| 230 Sam Houston State University | 445 | 373 | 352 | 376 | 391 | 373 | 328 | 343 |
| Total, 1st 230 insts. | 328,833 | 332,183 | 341,294 | 351,596 | 356,748 | 361,312 | 366,712 | 380,145 |
| 231 East Carolina University | 443 | 448 | 374 | 373 | 354 | 364 | 382 | 363 |
| 232 East Tennessee State University | 224 | 193 | 206 | 241 | 262 | 356 | 318 | 343 |
| 233 East Texas State University | 645 | 505 | 501 | 481 | 36 | 348 | 377 | 363 |
| 234 Baylor University | 191 | 256 | 306 | 289 | 289 | 340 | 430 | 493 |
| 235 Dartmouth College | 292 | 285 | 293 | 308 | 298 | 339 | 352 | 339 |
| 236 Idaho State University | 233 | 232 | 266 | 257 | 336 | 338 | 445 | 512 |
| 237 Ball State University | 570 | 518 | 473 | 477 | 573 | 328 | 333 | 421 |
| 238 University of North Dakota | 365 | 351 | 360 | 356 | 341 | 327 | 332 | 326 |
| 239 Clarkson University | 303 | 337 | 343 | 348 | 319 | 320 | 308 | 312 |
| 240 Central Michigan University | 449 | 393 | 397 | 399 | 363 | 316 | 312 | 298 |
| Total, 1st 240 insts. | 332,548 | 335,699 | 344,811 | 355,125 | 359,919 | 364,688 | 370,301 | 383,915 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| 241 Seton Hall University | 366 | 319 | 322 | 300 | 297 | 313 | 278 | 278 |
| 242 College of William and Mary | 285 | 291 | 293 | 314 | 303 | 310 | 302 | 334 |
| 243 University of Missouri - St Louis | 300 | 284 | 274 | 323 | 303 | 309 | 313 | 316 |
| 244 Univ of Texas Hlth Sci Ctr San Antonio | 251 | 281 | 277 | 292 | 302 | 309 | 443 | 465 |
| 245 Lamar University | 289 | 334 | 304 | 330 | 282 | 303 | 320 | 339 |
| 246 Univ of Med and Dent of New Jersey | 228 | 229 | 222 | 237 | 268 | 302 | 272 | 284 |
| 247 Indiana State University | 255 | 282 | 282 | 297 | 311 | 302 | 352 | 298 |
| 248 University of Tulsa | 257 | 253 | 286 | 290 | 325 | 300 | 257 | 260 |
| 249 Duquesne University | 316 | 303 | 283 | 306 | 315 | 299 | 314 | 380 |
| 250 Univ of Texas SW Medical Ctr at Dallas | 249 | 260 | 265 | 276 | 257 | 298 | 317 | 321 |
| Total, 1st 250 insts. | 335,342 | 338,535 | 347,619 | 358,090 | 362,882 | 367,733 | 373,469 | 387,190 |
| 251 Fuller Theological Seminary | 172 | 180 | 176 | 186 | 245 | 280 | 295 | 338 |
| 252 Tennessee Technological University | 174 | 185 | 193 | 233 | 267 | 264 | 285 | 284 |
| 253 Forest Institute of Prof Psych | 0 | 146 | 154 | 190 | 251 | 254 | 260 | 256 |
| 254 California Institute of Integral Studie | 159 | 89 | 186 | 208 | 240 | 247 | 300 | 250 |
| 255 Clark University | 194 | 217 | 237 | 238 | 225 | 237 | 238 | 253 |
| 256 Caribbean Center for Advanced Studies | 358 | 347 | 373 | 371 | 248 | 237 | 213 | 216 |
| 257 South Dakota School of Mines and Tech | 223 | 228 | 209 | 202 | 232 | 236 | 274 | 242 |
| 258 Marshall University | 151 | 155 | 203 | 236 | 244 | 236 | 216 | 237 |
| 259 New Mexico Institute of Mining and Tech | 209 | 216 | 225 | 248 | 250 | 234 | 217 | 245 |
| 260 Louisiana Tech University | 213 | 267 | 290 | 279 | 242 | 227 | 263 | 230 |
| Total, 1st 260 insts. | 337,195 | 340,565 | 349,863 | 360,481 | 365,326 | 370,185 | 376,030 | 389,741 |
| 261 University of Nebraska Medical Center | 244 | 255 | 218 | 186 | 207 | 225 | 263 | 277 |
| 262 Baylor College of Medicine | 146 | 149 | 162 | 182 | 197 | 224 | 266 | 293 |
| 263 Medical College of Ohio at Toledo | 46 | 42 | 171 | 162 | 214 | 222 | 255 | 292 |
| 264 Union College(NY) | 142 | 223 | 278 | 336 | 239 | 216 | 176 | 198 |
| 265 Univ of Texas Med Branch at Galveston | 173 | 186 | 198 | 235 | 248 | 213 | 231 | 241 |
| 266 Calif Sch of Prof Psych - Fresno | 177 | 195 | 166 | 194 | 202 | 207 | 235 | 251 |
| 267 Stephen F. Austin State University | 268 | 313 | 269 | 274 | 237 | 206 | 205 | 204 |
| 268 Medical College of Georgia | 165 | 151 | 175 | 182 | 196 | 200 | 214 | 202 |
| 269 University of Arkansas - Med Sci Campus | 192 | 198 | 210 | 218 | 222 | 195 | 172 | 197 |
| 270 University of Tennessee, Memphis | 159 | 144 | 142 | 160 | 182 | 194 | 207 | 215 |
| Total, 1st 270 insts. | 338,907 | 342,421 | 351,852 | 362,610 | 367,470 | 372,287 | 378,254 | 392,111 |
| 271 Northeast Louisiana University | 174 | 190 | 187 | 175 | 185 | 186 | 188 | 202 |
| 272 University of South Dakota | 169 | 162 | 167 | 185 | 193 | 186 | 200 | 260 |
| 273 Andrews University | 86 | 0 | 0 | 0 | 0 | 181 | 189 | 299 |
| 274 Wake Forest University | 176 | 175 | 181 | 178 | 160 | 179 | 206 | 219 |
| 275 Oregon Grad Inst of Science & Technolog | 89 | 122 | 146 | 152 | 155 | 178 | 148 | 188 |
| 276 Chicago School of Prof Psych | 110 | 131 | 100 | 103 | 130 | 176 | 144 | 158 |
| 277 Spalding University | 120 | 144 | 138 | 132 | 167 | 167 | 151 | 149 |
| 278 Biola University | 188 | 126 | 171 | 168 | 160 | 166 | 173 | 190 |
| 279 University of the Pacific | 77 | 92 | 87 | 126 | 141 | 165 | 156 | 144 |
| 280 Creighton University | 46 | 56 | 144 | 139 | 150 | 165 | 136 | 130 |
| Total, 1st 280 insts. | 340,142 | 343,617 | 353,173 | 363,966 | 368,911 | 374,036 | 379,945 | 394,050 |
| 281 The Wright Institute | 195 | 186 | 145 | 156 | 156 | 161 | 176 | 207 |
| 282 University of Health Sciences (Chicago) | 88 | 87 | 86 | 139 | 119 | 148 | 117 | 119 |
| 283 Mercer University | 0 | 0 | 0 | 0 | 107 | 136 | 144 | 88 |
| 284 Florida A & M University | 58 | 57 | 66 | 63 | 65 | 135 | 140 | 153 |
| 285 Texas Christian University | 116 | 145 | 140 | 136 | 133 | 135 | 143 | 153 |
| 286 CUNY Mt. Sinai Sch of Medicine | 0 | 0 | 0 | 0 | 115 | 130 | 135 | 146 |
| 287 Bryn Mawr College | 178 | 167 | 152 | 138 | 133 | 127 | 116 | 114 |
| 288 Alfred University | 153 | 130 | 122 | 184 | 161 | 126 | 143 | 139 |
| 289 Wesleyan University | 104 | 105 | 114 | 117 | 121 | 121 | 115 | 121 |
| 290 Thomas Jefferson University | 59 | 71 | 72 | 74 | 115 | 118 | 137 | 158 |
| Total, 1st 290 insts. | 341,093 | 344,563 | 354,068 | 364,971 | 370,134 | 375,371 | 381,309 | 395,448 |
| 291 Rockefeller University | 106 | 117 | 115 | 121 | 117 | 117 | 121 | 128 |
| 292 Uniformed Serv Univ of the Hlth Science | 84 | 94 | 99 | 100 | 108 | 116 | 126 | 123 |
| 293 Woods Hole Oceanographic Institution | 100 | 106 | 112 | 125 | 120 | 113 | 0 | 0 |
| 294 Albany Medical Center Graduate School | 64 | 70 | 77 | 92 | 93 | 110 | 100 | 86 |
| 295 SUNY - Health Sci Ctr at Brooklyn | 79 | 80 | 79 | 80 | 83 | 93 | 100 | 108 |
| 296 Oregon Health Sciences University | 47 | 45 | 56 | 64 | 76 | 90 | 88 | 103 |
| 297 University of Northern Iowa | 75 | 99 | 101 | 107 | 91 | 89 | 83 | 102 |
| 298 Medical University of South Carolina | 84 | 81 | 87 | 111 | 85 | 88 | 108 | 168 |
| 299 The Medical College of Pennsylvania | 67 | 67 | 69 | 60 | 90 | 86 | 92 | 100 |
| 300 Eastern Virginia Medical School | 63 | 69 | 74 | 71 | 73 | 78 | 70 | 111 |
| Total, 1st 300 insts. | 341,862 | 345,391 | 354,937 | 365,902 | 371,068 | 376,351 | 382,197 | 396,477 |

See explanatory information, if any, and SOURCE(S) at end of table.

## Table 23. Graduate science and engineering students in doctorate-granting institutions, ranked by 1990 total graduate science and engineering students: 1983-90

Page 6 of 6

| Institutional ranking | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|
| 301 CUNY Herbert H. Lehman College | 60 | 56 | 54 | 113 | 73 | 75 | 75 | 78 |
| 302 Institute of Paper Science & Technology | 100 | 100 | 99 | 91 | 95 | 69 | 45 | 57 |
| 303 Emerson College | 42 | 0 | 0 | 0 | 0 | 69 | 74 | 58 |
| 304 Catholic University of Puerto Rico | 16 | 51 | 48 | 46 | 58 | 66 | 61 | 54 |
| 305 Indiana University of Pennsylvania | 163 | 0 | 0 | 0 | 0 | 63 | 103 | 123 |
| 306 Rand Graduate School of Policy Studies | 60 | 57 | 60 | 62 | 70 | 60 | 60 | 48 |
| 307 Medical College of Wisconsin | 67 | 53 | 57 | 68 | 61 | 60 | 84 | 91 |
| 308 Texas College of Osteopathic Medicine | 50 | 35 | 51 | 58 | 60 | 59 | 0 | 0 |
| 309 Baylor College of Dentistry | 46 | 58 | 58 | 46 | 52 | 56 | 57 | 47 |
| 310 SUNY - Health Sci Ctr at Syracuse | 45 | 53 | 43 | 47 | 57 | 55 | 60 | 51 |
| Total, 1st 310 insts. | 342,511 | 345,854 | 355,407 | 366,433 | 371,594 | 376,983 | 382,816 | 397,084 |
| 311 Mayo Graduate School | 18 | 32 | 46 | 46 | 53 | 55 | 74 | 98 |
| 312 Philadelphia Coll of Pharmacy and Sci | 47 | 36 | 53 | 58 | 55 | 52 | 46 | 61 |
| 313 Mass College of Pharmacy/Allied Health | 56 | 56 | 65 | 65 | 40 | 47 | 39 | 41 |
| 314 University of Maryland Eastern Shore | 0 | 0 | 0 | 0 | 0 | 39 | 62 | 82 |
| 315 Meharry Medical College | 36 | 37 | 41 | 32 | 34 | 36 | 35 | 47 |
| 316 Institute of Textile Technology | 20 | 16 | 16 | 28 | 31 | 35 | 30 | 30 |
| 317 SUNY State College of Optometry | 7 | 7 | 15 | 16 | 19 | 33 | 33 | 28 |
| 318 Maharishi International University | 0 | 0 | 0 | 0 | 0 | 31 | 68 | 77 |
| 319 Oral Roberts University | 36 | 39 | 34 | 27 | 25 | 23 | 33 | 0 |
| 320 Ponce School of Medicine | 0 | 0 | 0 | 0 | 0 | 21 | 22 | 19 |
| Total, 1st 320 insts. | 342,731 | 346,077 | 355,677 | 366,703 | 371,851 | 377,355 | 383,258 | 397,567 |
| 321 Smith College | 5 | 4 | 4 | 4 | 4 | 5 | 6 | 5 |
| 322 ROSEMEAD GRADUATE SCHOOL OF PSYCHOLOGY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 323 University of New Orleans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 324 UNIVERSITY OF OKLAHOMA HEALTH SCI CENTE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 325 University of Massachusetts at Amherst | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 326 Providence College | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 327 Xavier University | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 76 |
| 328 Univ of Health Sciences (Kansas City) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 329 West Virginia Sch of Osteopathic Med | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 330 OKLAHOMA COLL OF OSTEO MED & SURGERY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total, 1st 330 insts. | 342,736 | 346,081 | 355,681 | 366,707 | 371,855 | 377,360 | 383,340 | 397,648 |
| 331 DESERT RESEARCH INSTITUTE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 332 UNIV OF ILLINOIS MED CENTER - CHICAGO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 333 GEORGE PEABODY COLLEGE FOR TEACHERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 334 Kirksville College of Osteopathic Med | 0 | 3 | 3 | 7 | 0 | 0 | 0 | 1 |
| 335 University of Massachusetts at Worceste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 336 NE Ohio Univ Med School | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 337 University of New England | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 338 Phila College of Osteopathic Medicine | 8 | 8 | 9 | 0 | 0 | 0 | 15 | 12 |
| 339 NEED UNIVERSITY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 340 Coll of Osteopathic Med of the Pacific | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total, 1st 340 insts. | 342,778 | 346,092 | 355,693 | 366,714 | 371,855 | 377,360 | 383,355 | 397,690 |
| 341 UNIVERSITY OF OKLAHOMA - NORMAN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 342 Pacific Grad School of Prof Psych | 178 | 172 | 182 | 213 | 246 | 0 | 347 | 368 |
| 343 UNIVERSITY OF DALLAS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 344 Univ of Texas MD Anderson Cancer Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 345 Univ. of Osteopathic Med & Health Sci | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 346 Morehouse School of Medicine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 347 Clark Atlanta University | 0 | 0 | 0 | 0 | 0 | 0 | 312 | 279 |
| 348 Chicago Coll of Osteo Medicine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 349 Charles R. Drew Univ of Medicine & Sci | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total, 1st 349 insts. | 342,956 | 346,264 | 355,875 | 366,927 | 372,101 | 377,360 | 384,014 | 398,405 |

NOTE: Includes medical schools.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 24. Science and engineering postdoctoral appointees in doctorate-granting institutions by field and source of support, and number of postdoctoral appointees who were non-U.S. citizens: 1990

| Field | Total | Source of support | | | | | Number of post-doctoral appointees who were not U.S citizens |
|---|---|---|---|---|---|---|---|
| | | Federal | | | | Non-Federal | |
| | | Total | Fellowships | Traineeships | Research grants | | |
| Total, all surveyed fields | 30,432 | 20,929 | 2,906 | 2,726 | 15,297 | 9,503 | 14,678 |
| Total, science/engineering fields | 22,397 | 16,144 | 1,905 | 1,190 | 13,049 | 6,253 | 11,307 |
| Engineering, total | 1,953 | 1,258 | 37 | 29 | 1,192 | 695 | 1,344 |
| Aerospace | 67 | 54 | 2 | 2 | 50 | 13 | 46 |
| Agricultural | 31 | 16 | 0 | 0 | 16 | 15 | 19 |
| Biomedical | 74 | 52 | 3 | 6 | 43 | 22 | 37 |
| Chemical | 551 | 297 | 5 | 5 | 287 | 254 | 396 |
| Civil | 168 | 107 | 6 | 2 | 99 | 61 | 91 |
| Electrical | 241 | 161 | 5 | 3 | 153 | 80 | 163 |
| Engineering science | 76 | 60 | 3 | 0 | 57 | 16 | 47 |
| Industrial | 12 | 7 | 0 | 0 | 7 | 5 | 3 |
| Mechanical | 219 | 157 | 6 | 7 | 144 | 62 | 152 |
| Metallurgical/materials | 368 | 242 | 5 | 1 | 236 | 126 | 280 |
| Mining | 19 | 16 | 0 | 3 | 13 | 3 | 18 |
| Nuclear | 30 | 21 | 0 | 0 | 21 | 9 | 21 |
| Petroleum | 14 | 9 | 0 | 0 | 9 | 5 | 10 |
| Engineering, n.e.c. | 83 | 59 | 2 | 0 | 57 | 24 | 63 |
| Sciences, total | 20,444 | 14,886 | 1,868 | 1,161 | 11,857 | 5,558 | 9,963 |
| Physical sciences | 5,545 | 4,422 | 312 | 36 | 4,074 | 1,123 | 3,340 |
| Astronomy | 184 | 168 | 30 | 0 | 138 | 16 | 72 |
| Chemistry | 3,610 | 2,798 | 227 | 29 | 2,542 | 812 | 2,292 |
| Physics | 1,721 | 1,430 | 55 | 7 | 1,368 | 291 | 970 |
| Physical sciences, n.e.c. | 30 | 26 | 0 | 0 | 26 | 4 | 6 |
| Earth, atmospheric, and ocean sciences | 611 | 506 | 28 | 2 | 474 | 107 | 219 |
| Atmospheric sciences | 57 | 51 | 2 | 0 | 49 | 6 | 26 |
| Geosciences | 359 | 285 | 10 | 2 | 273 | 74 | 141 |
| Oceanography | 174 | 151 | 14 | 0 | 137 | 23 | 44 |
| Earth, atmos., and ocean sci., n.e.c. | 21 | 17 | 2 | 0 | 15 | 4 | 8 |
| Mathematical sciences | 253 | 158 | 41 | 1 | 116 | 95 | 154 |
| Computer sciences | 71 | 57 | 1 | 0 | 56 | 14 | 31 |
| Agricultural sciences | 499 | 267 | 9 | 2 | 256 | 232 | 190 |
| Biological sciences | 12,498 | 8,926 | 1,392 | 987 | 6,547 | 3,572 | 5,763 |
| Anatomy | 483 | 392 | 78 | 35 | 279 | 91 | 232 |
| Biochemistry | 2,319 | 1,732 | 229 | 100 | 1,403 | 587 | 1,210 |
| Biology | 1,361 | 1,034 | 205 | 47 | 782 | 327 | 550 |
| Biometry/epidemiology | 103 | 75 | 10 | 44 | 21 | 28 | 28 |
| Biophysics | 122 | 83 | 4 | 11 | 68 | 39 | 72 |
| Botany | 475 | 305 | 32 | 1 | 272 | 170 | 195 |
| Cell biology | 1,346 | 924 | 179 | 73 | 672 | 422 | 543 |
| Ecology | 57 | 38 | 2 | 0 | 36 | 19 | 18 |
| Entomology/parasitology | 212 | 136 | 5 | 0 | 131 | 76 | 74 |
| Genetics | 644 | 409 | 109 | 66 | 234 | 235 | 248 |
| Microbiology | 1,505 | 1,074 | 147 | 154 | 773 | 431 | 702 |
| Nutrition | 139 | 66 | 0 | 9 | 57 | 73 | 87 |
| Pathology | 1,037 | 641 | 104 | 148 | 389 | 396 | 434 |
| Pharmacology | 1,190 | 890 | 98 | 140 | 652 | 300 | 647 |
| Physiology | 1,074 | 820 | 150 | 121 | 549 | 254 | 515 |
| Zoology | 216 | 139 | 38 | 8 | 93 | 77 | 66 |
| Biosciences, n.e.c. | 215 | 168 | 2 | 30 | 136 | 47 | 122 |
| Psychology | 487 | 357 | 48 | 103 | 206 | 130 | 85 |
| Social sciences | 480 | 195 | 37 | 30 | 128 | 285 | 201 |
| Agricultural economics | 57 | 28 | 0 | 0 | 28 | 29 | 31 |
| Anthropology | 88 | 24 | 4 | 3 | 17 | 64 | 21 |
| Economics (except agricultural) | 42 | 12 | 6 | 0 | 6 | 30 | 35 |
| Geography | 19 | 15 | 0 | 0 | 15 | 4 | 3 |
| History and philosophy of science | 18 | 3 | 0 | 0 | 3 | 15 | 6 |
| Linguistics | 38 | 10 | 1 | 2 | 7 | 28 | 21 |
| Political science | 66 | 24 | 18 | 1 | 5 | 42 | 30 |
| Sociology | 104 | 56 | 7 | 23 | 26 | 48 | 36 |
| Sociology/anthropology | 2 | 0 | 0 | 0 | 0 | 2 | 1 |
| Social sciences, n.e.c. | 46 | 23 | 1 | 1 | 21 | 23 | 17 |
| Total, health fields | 8,035 | 4,785 | 1,001 | 1,536 | 2,248 | 3,250 | 3,371 |
| Dentistry | 66 | 41 | 15 | 6 | 20 | 25 | 42 |
| Neurology | 537 | 347 | 67 | 81 | 199 | 190 | 262 |
| Nursing | 23 | 21 | 15 | 2 | 4 | 2 | 1 |
| Pharmaceutical sciences | 409 | 306 | 8 | 12 | 286 | 103 | 258 |
| Preventive medicine/community health | 219 | 158 | 33 | 54 | 71 | 61 | 76 |
| Speech pathology/audiology | 28 | 26 | 5 | 7 | 14 | 2 | 9 |
| Veterinary sciences | 119 | 72 | 18 | 13 | 41 | 47 | 43 |
| Clinical medicine, n.e.c. | 6,480 | 3,737 | 828 | 1,329 | 1,580 | 2,743 | 2,619 |
| Health related, n.e.c. | 154 | 77 | 12 | 32 | 33 | 77 | 64 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table 25. Science and engineering postdoctoral appointees in doctorate-granting institutions by field: 1982-90

| Field | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Total, all surveyed fields | 19,362 | 20,727 | 21,535 | 22,423 | 23,781 | 24,929 | 26,165 | 28,107 | 30,432 |
| Total, science/engineering fields | 14,672 | 15,699 | 16,211 | 16,975 | 17,989 | 18,911 | 19,866 | 21,145 | 22,397 |
| Engineering, total | 978 | 1,101 | 1,194 | 1,347 | 1,398 | 1,442 | 1,684 | 1,914 | 1,953 |
| Aerospace | 25 | 32 | 42 | 51 | 48 | 43 | 48 | 38 | 67 |
| Agricultural | 6 | 4 | 8 | 15 | 17 | 29 | 31 | 38 | 31 |
| Biomedical | 31 | 28 | 34 | 47 | 52 | 44 | 47 | 67 | 74 |
| Chemical | 174 | 198 | 245 | 273 | 295 | 310 | 423 | 466 | 551 |
| Civil | 108 | 131 | 146 | 122 | 140 | 175 | 203 | 182 | 168 |
| Electrical | 176 | 174 | 171 | 176 | 172 | 175 | 186 | 193 | 241 |
| Engineering science | 76 | 71 | 63 | 90 | 67 | 42 | 38 | 74 | 76 |
| Industrial | 9 | 13 | 21 | 18 | 25 | 26 | 32 | 38 | 12 |
| Mechanical | 130 | 182 | 196 | 207 | 241 | 216 | 216 | 302 | 219 |
| Metallurgical/materials | 166 | 204 | 168 | 245 | 249 | 282 | 325 | 323 | 368 |
| Mining | 10 | 19 | 18 | 19 | 25 | 26 | 63 | 90 | 19 |
| Nuclear | 18 | 15 | 19 | 31 | 31 | 20 | 17 | 36 | 30 |
| Petroleum | 4 | 1 | 4 | 6 | 1 | 10 | 8 | 9 | 14 |
| Engineering, n.e.c. | 45 | 29 | 59 | 47 | 35 | 44 | 47 | 58 | 83 |
| Sciences, total | 13,694 | 14,598 | 15,017 | 15,628 | 16,591 | 17,469 | 18,182 | 19,231 | 20,444 |
| Physical sciences | 4,281 | 4,444 | 4,386 | 4,517 | 4,863 | 4,953 | 5,187 | 5,355 | 5,545 |
| Astronomy | 148 | 111 | 118 | 138 | 133 | 125 | 147 | 186 | 184 |
| Chemistry | 2,805 | 2,973 | 2,906 | 2,995 | 3,151 | 3,246 | 3,429 | 3,463 | 3,610 |
| Physics | 1,326 | 1,350 | 1,320 | 1,342 | 1,527 | 1,548 | 1,578 | 1,678 | 1,721 |
| Physical sciences, n.e.c. | 2 | 10 | 42 | 42 | 52 | 34 | 33 | 29 | 30 |
| Earth, atmospheric, and ocean sciences | 335 | 415 | 488 | 375 | 417 | 420 | 499 | 459 | 611 |
| Atmospheric sciences | 32 | 41 | 74 | 48 | 43 | 58 | 71 | 58 | 57 |
| Geosciences | 216 | 237 | 250 | 226 | 247 | 239 | 279 | 274 | 359 |
| Oceanography | 78 | 120 | 151 | 79 | 98 | 81 | 116 | 107 | 174 |
| Earth, atmos., and ocean sci., n.e.c. | 9 | 17 | 13 | 22 | 29 | 42 | 33 | 20 | 21 |
| Mathematical sciences | 194 | 170 | 203 | 226 | 201 | 228 | 280 | 223 | 253 |
| Computer sciences | 46 | 82 | 63 | 74 | 74 | 100 | 91 | 78 | 71 |
| Agricultural sciences | 279 | 295 | 358 | 357 | 388 | 414 | 422 | 477 | 499 |
| Biological sciences | 7,756 | 8,406 | 8,758 | 9,226 | 9,816 | 10,515 | 10,885 | 11,723 | 12,498 |
| Anatomy | 261 | 284 | 282 | 310 | 342 | 334 | 382 | 468 | 483 |
| Biochemistry | 1,684 | 1,750 | 1,789 | 1,866 | 1,989 | 2,121 | 2,090 | 2,244 | 2,319 |
| Biology | 942 | 1,013 | 1,127 | 1,128 | 1,101 | 1,189 | 1,232 | 1,290 | 1,361 |
| Biometry/epidemiology | 53 | 54 | 67 | 59 | 99 | 78 | 76 | 105 | 103 |
| Biophysics | 129 | 183 | 121 | 101 | 133 | 116 | 124 | 143 | 122 |
| Botany | 298 | 369 | 347 | 371 | 394 | 435 | 475 | 480 | 475 |
| Cell biology | 516 | 653 | 648 | 723 | 812 | 899 | 894 | 977 | 1,346 |
| Ecology | 28 | 39 | 36 | 37 | 37 | 39 | 33 | 52 | 57 |
| Entomology/parasitology | 119 | 112 | 113 | 139 | 143 | 162 | 176 | 219 | 212 |
| Genetics | 314 | 344 | 382 | 377 | 428 | 493 | 504 | 535 | 644 |
| Microbiology | 1,014 | 1,025 | 1,071 | 1,168 | 1,255 | 1,310 | 1,405 | 1,539 | 1,505 |
| Nutrition | 138 | 150 | 150 | 202 | 185 | 177 | 141 | 130 | 139 |
| Pathology | 540 | 584 | 607 | 619 | 709 | 765 | 819 | 899 | 1,037 |
| Pharmacology | 777 | 835 | 848 | 901 | 934 | 964 | 1,079 | 1,166 | 1,190 |
| Physiology | 673 | 724 | 817 | 833 | 896 | 1,019 | 1,034 | 1,067 | 1,074 |
| Zoology | 203 | 183 | 157 | 212 | 217 | 214 | 209 | 214 | 216 |
| Biosciences, n.e.c. | 67 | 72 | 196 | 180 | 142 | 200 | 212 | 195 | 215 |
| Psychology | 520 | 435 | 422 | 498 | 520 | 458 | 497 | 535 | 487 |
| Social sciences | 283 | 353 | 339 | 355 | 332 | 381 | 321 | 381 | 480 |
| Agricultural economics | 10 | 28 | 18 | 31 | 35 | 31 | 20 | 28 | 57 |
| Anthropology | 34 | 60 | 57 | 57 | 52 | 54 | 56 | 74 | 88 |
| Economics (except agricultural) | 13 | 20 | 26 | 19 | 22 | 36 | 9 | 33 | 42 |
| Geography | 3 | 7 | 14 | 10 | 11 | 18 | 22 | 22 | 19 |
| History and philosophy of science | 16 | 19 | 12 | 11 | 11 | 19 | 16 | 12 | 18 |
| Linguistics | 47 | 51 | 30 | 26 | 21 | 42 | 36 | 30 | 38 |
| Political science | 44 | 43 | 31 | 44 | 66 | 54 | 50 | 41 | 66 |
| Sociology | 89 | 99 | 114 | 92 | 84 | 93 | 73 | 83 | 104 |
| Sociology/anthropology | 2 | 1 | 0 | 2 | 1 | 3 | 1 | 0 | 2 |
| Social sciences, n.e.c. | 25 | 25 | 37 | 63 | 29 | 31 | 38 | 58 | 46 |
| Total, health fields | 4,690 | 5,028 | 5,326 | 5,448 | 5,792 | 6,018 | 6,299 | 6,962 | 8,035 |
| Dentistry | 246 | 190 | 171 | 201 | 89 | 64 | 87 | 38 | 66 |
| Neurology | 254 | 301 | 352 | 352 | 369 | 420 | 478 | 463 | 537 |
| Nursing | 0 | 6 | 16 | 17 | 16 | 49 | 30 | 36 | 23 |
| Pharmaceutical sciences | 238 | 207 | 237 | 272 | 330 | 345 | 396 | 616 | 609 |
| Preventive medicine/community health | 143 | 157 | 186 | 177 | 209 | 180 | 154 | 187 | 219 |
| Speech pathology/audiology | 10 | 18 | 18 | 18 | 12 | 25 | 26 | 28 | 28 |
| Veterinary sciences | 49 | 50 | 78 | 69 | 100 | 112 | 138 | 111 | 110 |
| Clinical medicine, n.e.c. | 3,658 | 3,998 | 4,168 | 4,242 | 4,566 | 4,731 | 4,885 | 5,358 | 6,289 |
| Health related, n.e.c. | 92 | 101 | 100 | 100 | 101 | 92 | 105 | 125 | 154 |

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

BLANK PAGE

## SURVEY MATERIALS

Page

Instructions for Survey of Graduate Science and Engineering Students and Postdoctorates, fall 1990 .......... 48

Survey of Graduate Students and Postdoctorates in Science and Engineering, Fall 1990: Departmental or Program Data Sheet (NSF Form 812) .......... 50

Crosswalk between NSF discipline codes and the NCES Classification of Instructional Programs .......... 52

# INSTRUCTIONS FOR SURVEY OF GRADUATE STUDENTS AND POSTDOCTORATES IN SCIENCE AND ENGINEERING, FALL 1990

### Purpose of the survey

The survey provides a comprehensive picture of the training of future scientists and engineers in the Nation's graduate schools. Data are used by Congress and the executive branch during budget preparation, and by State government agencies and other analysts to assess future supply and demand of science and engineering (S/E) personnel.

The average time required for questionnaire completion is 2 hours. Response burden comments should be directed to Herman Fleming at (202) 357-9520.

### Students to include in survey tabulations

Count as graduate students persons enrolled for credit in a S/E master's or Ph.D. degree program in fall 1990. Report M.D., D.O., D.V.M. or D.D.S. candidates, interns and residents only if they are concurrently working for a S/E master's or Ph.D. or are enrolled in a joint medical/Ph.D. program. Individuals who already hold graduate or medical degrees and are working on another master's or Ph.D. degree are considered graduate students (Items 5-7), not postdoctorates (Item 8).

Include S/E students performing thesis or dissertation research away from the campus (for example, at Government- and contractor-owned facilities) in the United States as long as they are enrolled for credit in an advanced-degree program. Exclude students enrolled in a foreign country (at a branch or extension center), as well as non-matriculated students.

All data should be reported in terms of headcounts, not full-time equivalents (FTEs).

### Students enrolled in multiple departments/institutions

A student should be reported in only one department. Students enrolled in interdisciplinary/interinstitutional programs should be counted only once, by their "home" department and institution.

### Incomplete data

Please write "unavailable" or "unknown" in data cells as applicable. "N/A" means "not applicable" on this form. Data cells left blank are presumed to be zeroes.

### ITEM 5: FULL-TIME STUDENTS

Use lines (1)-(6) to report all **full-time** students according to the source of the largest amount of their support. These students are engaged full time in their training activities in their S/E fields; these activities may embrace any appropriate combination of study, teaching and research, depending on your institution's own policy.

### Mechanisms of support lines (1)-(5)

The selection process distinguishes fellowships from traineeships. A **fellowship** (1) is awarded directly to, or on behalf of, a student selected in a competition, usually national in scope, to enable pursuit of post-baccalaureate training. A **traineeship** (2) is an educational award to a student selected by his university. An **assistantship** should be classified as **research** (3) or **teaching** (4), depending on assigned duties, e.g., a student devoting most of his/her time to teaching should be reported on line (4). All other full-time students, including members of the armed forces whose tuition is paid by the Department of Defense, should be reported on line (5).

### Federal sources of support columns (A)-(F)

Note that students supported by Federal loans should be reported in column (J): self-supported.

**Department of Defense (DOD) (A):** Sources include the Departments of the Army, Navy, or Air Force, as well as programs within the Office of the Secretary of Defense. Students receiving their main support from the Veterans Administration under the G.I. Bill should be reported under column (F), "Other Federal sources".

**Department of Health and Human Services (HHS) (B)** and (C): Report students receiving support from the institutes or divisions of the National Institutes of Health (NIH) under (B); support from all other components of HHS should be reflected in (C). Refer to the organizational roster under "Definitions".

**U.S. Department of Agriculture (USDA) (E):** Include research assistants working on projects financed out of Hatch, McIntyre-Stennis, or Smith-Lever formula funds, competitive research grants, and institution fellowship/training grants.

**Other Federal Sources (F):** Report students receiving support from Federal agencies other than (A) through (E) such as the Fulbright program, the G.I. Bill, Department of Education, and Department of Energy programs.

### Non-Federal Sources of Support columns (G)-(I)

**Institutional support** (G): Report students supported from your institution, including those receiving tuition waivers. State and local goverment support is also reflected in this column. Students supported from funds originating with the Federal government, such as training grants, should be reported under the appropriate Federal agency.

**Foreign sources** (H): Include students supported from any non-U.S. source, such as foreign governments, industrial firms, or specialized agencies of the United Nations.

**Other U.S. sources** (I): Include students supported from nonprofit institutions, private industry, and all other non-Federal U.S. sources not included in columns (G) or (J).

**Self-supported students** (J): Report both foreign and U.S. citizen students whose main source of support is derived from loans from any source (including the Federal government) and from personal or family financial contributions. Note that these students should be included in the total, column (K).

### Women, line (7)

Report all female students by their source of main support. Please note that in each column, data on line (7) should not exceed the total on line (6).

### First-year students, lines (8) and (9)

A first-year student is one who will have completed less than a full year of graduate study as of the beginning of the fall term in 1990 in the program in which he/she is enrolled for a degree. All other students should be considered beyond their first year.

### ITEM 6: PART-TIME STUDENTS

Report all part-time students here, regardless of their support source. These students are enrolled in advanced-degree programs and are not pursuing graduate work full-time, as defined by your institution.

### ITEM 7: CITIZENSHIP AND RACIAL/ETHNIC BACKGROUND OF U.S.CITIZENS

Persons with U.S. citizenship should be reported in columns (A) through (F). Use the racial/ethnic designations from the Bureau of the Census listed under "Definitions". As applied in this survey, these designations do not denote scientific definitions of anthropological origins; thus, a student may be included in the group to which he appears to belong, identifies with, or is regarded in the community as belonging. Count each person in only one racial/ethnic group.

Non-U.S. citizens, whether permanent residents or holding temporary visas, should be reported in column (G): foreign. Applicants for U.S. citizenship should be reported as foreign. Native residents of a U.S. possession are U.S. citizens.

Total full- and part-time enrollments reported in this item should match those reported in items 5 and 6, respectively.

### ITEM 8: POSTDOCTORATES AND NONFACULTY RESEARCH STAFF WITH DOCTORATES

Include individuals with S/E Ph.D.'s. M.D.'s, D.D.S.'s or D.V.M.'s (including foreign degrees that are equivalent to U.S. doctorates) who devote their primary effort to research activities or study in the department under temporary appointments carrying no academic rank. They may contribute to the academic program through seminars, lectures, or working with graduate students. Their postdoctoral activities provide additional training for them. Include persons affiliated with this department as well as those employed in associated academic research units. Exclude clinical fellows and those with appointments in residency training programs in medical and health professions, unless research training under the supervision of a senior mentor is the primary purpose of the appointment.

Use columns (A) - (D) to report postdoctorates by source of support, with the total number reported in column (E). Of this total, report the number who are foreign in column (F). Column (G), other nonfaculty doctoral research staff with doctorates, should include all doctoral scientists and engineers who are involved principally in research activities but are considered neither postdoctoral appointees nor members of the regular faculty.

On line (2), report the number of women in each category. On line (3), report those postdoctorates and nonfaculty research staff who hold first professional medical degrees (M.D., D.D.S., D.O., D.V.M.). Please note that in each column, data on lines (2) and (3) should not exceed the total on line (1).

### DEFINITIONS:

(1) **National Institutes of Health Organizational Roster**
Item 5, column (B)

National Center for Research Resources
Fogarty International Center
National Cancer Institute
National Center for Nursing Research
National Eye Institute
National Heart, Lung and Blood Institute
National Institute on Aging
National Institute on Allergy and Infectious Disease
National Institute of Arthritis and Musculoskeletal and Skin Diseases
National Institute of Diabetes and Digestive and Kidney Diseases
National Institute of Child Health and Human Development
National Institute of Dental Research
National Institute of Environmental Health Sciences
National Institute of General Medical Sciences
National Institute of Neurological and Communicative Disorders and Stroke
National Library of Medicine

(2) **Other HHS Administrative Units**
Item 5, column (C)

Alcohol, Drug Abuse and Mental Health Administration
National Institute of Mental Health
Center for Disease Control
Food and Drug Administration
Health Resources Administration
Health Services Administration
Office of Human Development

(3) **Racial/Ethnic Categories for U.S. Citizens defined by the Bureau of the Census** (Item 7)

**Black, non-Hispanic:** Persons having origins in any of the Black racial groups (except those of Hispanic origin).

**American Indian or Alaskan native:** Persons having origins in any of the original peoples of North America.

**Asian or Pacific Islander:** Persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. These areas include China, Japan, Korea, the Philippine Islands, and Samoa.

**Hispanic:** Persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

**White, non-Hispanic:** Persons having origins in any of the original peoples of Europe, North Africa or the Middle East, except those of Hispanic origin.

**For further information ...**

If you have any questions regarding the survey, please contact J. G. Huckenpahler of NSF's Division of Science Resources Studies at (202) 634-4787 [fax # (202) 634-4683].

**UPON COMPLETING THIS FORM, PLEASE RETURN IT TO YOUR SURVEY COORDINATOR FOR TRANSMITTAL BY JANUARY 31, 1991.**

NSF Form 812 Aug. 90

Form Approved
OMB No. 314-0062
Appr. Exp. 8/31/91

## NATIONAL SCIENCE FOUNDATION and NATIONAL INSTITUTES OF HEALTH

## Survey of Graduate Students and Postdoctorates in Science and Engineering, Fall 1990

## DEPARTMENT OR PROGRAM DATA SHEET

**due date: January 31, 1991**

**Identifying Information** (Items 1-4)

1. Institution Name ______________________________

2. Name of S/E department or program:

______________________________

If changed since last year, please indicate previous name and whether this represents a merger, split, or expanded program:

______________________________

3. Person in department (or program) preparing this form:

Name: ______________________________

Title: ______________________________

Phone: (____) ______________________________

Institution and department code (LEAVE BLANK)

4. Highest degree granted by department or program in 1990/91, (CHECK ONE ONLY) If your department has never granted a graduate degree, but is a department of clinical medicine with or without postdoctorates, check (3).

Doctorate __________(1) Master's __________(2) No graduate degree offered __________(3)

**Report all data on a "headcount" basis, not FTEs, fractions, or decimals. If your department or program does not enroll graduate students, please move to item 8.**

5. NUMBER OF **FULL-TIME** GRADUATE STUDENTS enrolled for advanced degrees (master's and doctorate) in fall 1990. Report each student **only once** according to the source and mechanism of the **largest amount of support** received in fall 1990.

Students receiving equal support from multiple sources or through multiple mechanisms should be reported only once. To determine the primary source, consider only tuition and other academic expenses.

| MECHANISMS OF SUPPORT | | STUDENTS RECEIVING FINANCIAL ASSISTANCE | | | | | | | | | SELF-SUPPORTED STUDENTS | **TOTAL FULL-TIME GRADUATE ENROLLMENT** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEDERAL SOURCES (excluding loans) | | | | | | NON-FEDERAL SOURCES | | | | |
| | | | HHS | | | | | | | | | |
| | | Department of Defense (A) | National Institutes of Health (B) | Other HHS (C) | National Science Foundation (D) | Department of Agriculture (E) | Other Federal sources (F) | Institutional support (including State and local government) (G) | Foreign sources (H) | Other U.S. sources (I) | (Including loans and family sources) (J) | (Sum of (A) thru (J)) (K) |
| Graduate Fellowships | (1) | | | | | | | | | | ■ | |
| Graduate Traineeships | (2) | | | | | | | | | | ■ | |
| Graduate Research Assistantships | (3) | | | | | | | | | | ■ | |
| Graduate Teaching Assistantships | (4) | ■ | | | | | | | ■ | | ■ | |
| Other Types of Support | (5) | | | | | | | | | | | |
| **FULL-TIME TOTAL**[1] | (6) | | | | | | | | | | | |
| Of the students in line (6), how many in each data cell are WOMEN? | (7) | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| **FIRST-YEAR** STUDENTS | (8) | Of the students on line (6), column (K), how many are FIRST-YEAR students? (Should not exceed total on line (6)). | |
| **FIRST-YEAR WOMEN** STUDENTS | (9) | Of the first-year students on line (8), how many are WOMEN? | |

---

[1] The total from line (6) should be inserted in item (7), line (1), column (H)

6. NUMBER OF **PART-TIME** GRADUATE STUDENTS enrolled for advanced degrees (master's and doctorate) in fall 1990.

| | | |
|---|---|---|
| **PART-TIME TOTAL**[1] | (1) | |
| Of the students on line (1), how many are WOMEN? | (2) | |

[1] The total from line (1) should be inserted in item (7), line (2), column (H)

| 7. **RACE/ ETHNICITY** of FULL-TIME (line (1)) and PART-TIME (line (2)) graduate students in fall 1990. | Of the student totals in items 5 and 6, how many belong to the following RACIAL/ETHNIC categories? Be sure to count each student only once. | | U.S. CITIZENS ONLY | | | | | | Foreign: permanent residents and temporary visa holders (G) | **TOTAL** (Sum of (A) thru (G)) (H) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Black non-Hispanic (A) | Amer. Indian/ Alaskan Native (B) | Asian/ Pacific Islander (C) | Hispanic (D) | White non-Hispanic (E) | Other, unknown or declined to state (F) | | |
| | FULL TIME, column (H), should equal item 5, line (6), column (K) | (1) | | | | | | | | |
| | PART TIME, column (H), should equal item 6, line (1) | (2) | | | | | | | | |

| 8. NUMBER OF **POSTDOCTORATES AND NON-FACULTY RESEARCH STAFF WITH DOCTORATES** in fall 1990. | | POSTDOCTORATES | | | | | | | OTHER NON-FACULTY RESEARCH STAFF WITH DOCTORATES (G) |
|---|---|---|---|---|---|---|---|---|---|
| | | SOURCE OF SUPPORT | | | | TOTAL for all sources (A) thru (D) (E) | Of the total in (E), how many are FOREIGN? (F) | | |
| | | Federal | | | Non-Federal (D) | | | | |
| | | Fellowships (A) | Traineeships (B) | Research grants (C) | | | | | |
| TOTAL | (1) | | | | | | | | |
| Of the total in each cell of line (1), how many are WOMEN? | (2) | | | | | | | | |
| Of the total in each cell of line (1), how many hold the M.D., D.O., D.D.S., or D.V.M. degree? | (3) | | | | | | | | |

Approximately how many personhours were required to complete this form? ☐

Explanation of variances from prior year's data or other comments:

List of other Federal sources (agencies) from item 5, column (F), and number of full-time students supported by each:

**NOTE:** This information is solicited under the authority of the National Science Foundation Act of 1950, as amended. All information you provide will be used for statistical purposes only. Your response is entirely voluntary and your failure to provide some or all of the information will in no way adversely affect your institution.

This questionnaire has been printed on recycled paper.

# SURVEY OF GRADUATE STUDENTS AND POSTDOCTORATES IN SCIENCE AND ENGINEERING

## CROSSWALK BETWEEN NSF DISCIPLINE CODES AND THE NCES CLASSIFICATION OF INSTRUCTIONAL PROGRAMS

---

The following set of discipline codes is used to categorize science and engineering departments in the Survey of Graduate Students and Postdoctorates in Science and Engineering. Representative department names are shown under each of the discipline codes.

---

### ENGINEERING

- 101 AEROSPACE ENGINEERING
  - 14.02 AEROSPACE, AERONAUTICAL, AND ASTRONAUTICAL ENGINEERING
- 102 AGRICULTURAL ENGINEERING
  - 14.03 AGRICULTURAL ENGINEERING
- 103 BIOMEDICAL ENGINEERING
  - 14.05 BIOENGINEERING AND BIOMEDICAL ENGINEERING
- 104 CHEMICAL ENGINEERING
  - 03.0509 WOOD SCIENCE
  - 14.07 CHEMICAL ENGINEERING
- 105 CIVIL ENGINEERING
  - 04.02 ARCHITECTURE
  - 14.04 ARCHITECTURAL ENGINEERING
  - 14.08 CIVIL ENGINEERING
  - 14.14 ENVIRONMENTAL HEALTH ENGINEERING
- 106 ELECTRICAL ENGINEERING
  - 14.09 COMPUTER ENGINEERING
  - 14.10 ELECTRICAL, ELECTRONICS, AND COMMUNICATIONS ENGINEERING
  - 14.1002 MICROELECTRONIC ENGINEERING
- 107 ENGINEERING SCIENCE
  - 14.12 ENGINEERING PHYSICS
  - 14.13 ENGINEERING SCIENCE
- 108 INDUSTRIAL ENGINEERING/MANAGEMENT SCIENCE
  - 14.17 INDUSTRIAL ENGINEERING
  - 14.27 SYSTEMS ENGINEERING
  - 30.06 SYSTEMS SCIENCE
- 109 MECHANICAL ENGINEERING
  - 14.11 ENGINEERING MECHANICS
  - 14.19 MECHANICAL ENGINEERING
- 110 METALLURGICAL AND MATERIALS ENGINEERING
  - 14.06 CERAMIC ENGINEERING
  - 14.18 MATERIALS ENGINEERING
  - 14.20 METALLURGICAL ENGINEERING
  - 14.28 TEXTILE ENGINEERING
  - 40.0701 METALLURGY
- 111 MINING ENGINEERING
  - 14.15 GEOLOGICAL ENGINEERING
  - 14.16 GEOPHYSICAL ENGINEERING
  - 14.21 MINING AND MINERAL ENGINEERING
- 112 NUCLEAR ENGINEERING
  - 14.23 NUCLEAR ENGINEERING
- 113 PETROLEUM ENGINEERING
  - 14.25 PETROLEUM ENGINEERING
- 114 ENGINEERING, N.E.C.
  - 14.01 ENGINEERING, GENERAL
  - 14.1401 ENVIRONMENTAL HEALTH ENGINEERING
  - 14.22 NAVAL ARCHITECTURE AND MARINE ENGINEERING
  - 14.24 OCEAN ENGINEERING
  - 14.99 ENGINEERING, OTHER
  - 30.03 ENGINEERING AND OTHER DISCIPLINES

### PHYSICAL SCIENCES

- 201 ASTRONOMY
  - 40.02 ASTRONOMY
  - 40.03 ASTROPHYSICS
  - 40.09 PLANETARY SCIENCE
- 202 CHEMISTRY
  - 40.05 CHEMISTRY
- 203 PHYSICS
  - 40.08 PHYSICS
- 204 PHYSICAL SCIENCES, N.E.C.
  - 40.01 PHYSICAL SCIENCES, GENERAL
  - 40.0799 MISCELLANEOUS PHYSICAL SCIENCES, OTHER
  - 40.99 PHYSICAL SCIENCES, OTHER

### ENVIRONMENTAL SCIENCES

- 301 ATMOSPHERIC SCIENCES
  - 40.04 ATMOSPHERIC SCIENCES AND METEOROLOGY
- 302 GEOSCIENCES
  - 14.26 SURVEYING AND MAPPING SCIENCES
  - 40.06 GEOLOGICAL SCIENCES
  - 40.0703 EARTH SCIENCE
- 303 OCEANOGRAPHY
  - 26.0607 MARINE BIOLOGY
  - 40.0702 OCEANOGRAPHY
- 304 ENVIRONMENTAL SCIENCES, N.E.C.

### MATHEMATICAL SCIENCES

- 402 MATHEMATICS AND APPLIED MATHEMATICS
  - 06.1302 OPERATIONS RESEARCH (QUANTITATIVE METHODS)
  - 27.01 MATHEMATICS, GENERAL
  - 27.03 APPLIED MATHEMATICS
  - 27.04 PURE MATHEMATICS
  - 27.99 MATHEMATICS, OTHER
  - 30.08 MATHEMATICS AND COMPUTER SCIENCE
- 403 STATISTICS
  - 27.02 ACTUARIAL SCIENCES
  - 27.05 STATISTICS

### COMPUTER SCIENCES

- 401 COMPUTER SCIENCE
  - 06.12 MANAGEMENT INFORMATION SYSTEMS
  - 11 COMPUTER AND INFORMATION SCIENCES, GENERAL
  - 30.09 IMAGING SCIENCE

### AGRICULTURAL SCIENCES (SEE ALSO 102 AND 901)

- 501 AGRICULTURAL SCIENCES
  - 02.01 AGRICULTURAL SCIENCES, GENERAL
  - 02.02 ANIMAL SCIENCES
  - 02.03 FOOD SCIENCES
  - 02.04 PLANT SCIENCES
  - 02.05 SOIL SCIENCES
  - 02.99 AGRICULTURAL SCIENCES, OTHER
  - 03.01 RENEWABLE NATURAL RESOURCES, GENERAL
  - 03.02 CONSERVATION AND REGULATION
  - 03.03 FISHING AND FISHERIES
  - 03.05 FORESTRY AND RELATED SCIENCES
  - 03.06 WILDLIFE MANAGEMENT
  - 03.99 RENEWABLE NATURAL RESOURCES, OTHER
  - 31.04 WATER RESOURCES

### BIOLOGICAL SCIENCES

- 601 ANATOMY
  - 18.0201 CLINICAL ANATOMY
  - 26.0601 ANATOMY
- 602 BIOCHEMISTRY
  - 18.0202 CLINICAL BIOCHEMISTRY
  - 26.02 BIOCHEMISTRY AND BIOPHYSICS
- 603 BIOLOGY
  - 26.01 BIOLOGY, GENERAL
  - 26.0604 EMBRYOLOGY
- 604 BIOMETRY AND EPIDEMIOLOGY
  - 18.2202 EPIDEMIOLOGY
  - 26.0602 BIOMETRICS AND BIOSTATISTICS
- 605 BIOPHYSICS
- 606 BOTANY
  - 26.03 BOTANY (EXCLUDING 26.0302, BACTERIOLOGY—SEE 611)
- 607 CELL BIOLOGY
  - 26.04 CELL AND MOLECULAR BIOLOGY
  - 26.0606 HISTOLOGY

- 608 ECOLOGY
  - 26.0603 ECOLOGY
- 609 ENTOMOLOGY AND PARASITOLOGY
  - 26.0610 PARASITOLOGY
  - 26.0702 ENTOMOLOGY
- 610 GENETICS
  - 26.0703 GENETICS, HUMAN AND ANIMAL
- 611 MICROBIOLOGY, IMMUNOLOGY, AND VIROLOGY
  - 18.0203 CLINICAL MICROBIOLOGY
  - 18.1002 ALLERGIES AND ENDOMOLOGY
  - 18.1009 IMMUNOLOGY
  - 26.0502 BACTERIOLOGY
  - 26.05 MICROBIOLOGY
- 612 NUTRITION
  - 19.05 FOOD SCIENCES AND HUMAN NUTRITION
  - 20.0108 FOOD AND NUTRITION
  - 26.0609 NUTRITIONAL SCIENCES
- 613 PATHOLOGY
  - 18.0204 CLINICAL PATHOLOGY
  - 18.1018 PATHOLOGY
  - 26.0704 PATHOLOGY, HUMAN AND ANIMAL
- 614 PHARMACOLOGY
  - 18.0205 CLINICAL TOXICOLOGY
  - 26.0612 TOXICOLOGY
  - 26.0705 PHARMACOLOGY, HUMAN AND ANIMAL
  - 42.14 PSYCHOPHARMACOLOGY
- 615 PHYSIOLOGY
  - 18.0206 PHYSIOLOGY
  - 26.0706 PHYSIOLOGY, HUMAN AND ANIMAL
- 616 ZOOLOGY
  - 26.0701 ZOOLOGY
  - 26.0799 ZOOLOGY, OTHER
- 617 BIOSCIENCES, N.E.C.
  - 26.0699 MISCELLANEOUS SPECIALIZED AREAS, LIFE SCIENCES, OTHER
  - 26.99 LIFE SCIENCES, OTHER

## PSYCHOLOGY

- 801 PSYCHOLOGY, COMBINED
- 802 PSYCHOLOGY, EXCEPT CLINICAL
  - 13.08 SCHOOL PSYCHOLOGY
  - 17.0801 ART THERAPY
  - 42 PSYCHOLOGY
- 803 CLINICAL PSYCHOLOGY

## SOCIAL SCIENCES

- 901 AGRICULTURAL ECONOMICS
  - 01.0102 AGRICULTURAL BUSINESS AND MANAGEMENT
  - 01.0103 AGRICULTURAL ECONOMICS
- 902 ANTHROPOLOGY (CULTURAL AND SOCIAL)
  - 45.02 ANTHROPOLOGY
  - 45.03 ARCHEOLOGY
- 903 ECONOMICS (EXCEPT AGRICULTURAL)
  - 06.05 BUSINESS ECONOMICS
  - 45.06 ECONOMICS
- 904 GEOGRAPHY
  - 45.07 GEOGRAPHY
- 905 HISTORY AND PHILOSOPHY OF SCIENCE
- 906 LINGUISTICS
  - 23.08 LINGUISTICS
  - 42.12 PSYCHOLINGUISTICS
- 907 POLITICAL SCIENCE
  - 44.01 PUBLIC AFFAIRS, GENERAL
  - 44.03 INTERNATIONAL PUBLIC SERVICE
  - 44.04 PUBLIC ADMINISTRATION
  - 44.05 PUBLIC POLICY STUDIES
  - 44.99 PUBLIC AFFAIRS, OTHER
  - 45.09 INTERNATIONAL RELATIONS
  - 45.10 POLITICAL SCIENCE AND GOVERNMENT
- 908 SOCIOLOGY
  - 45.05 DEMOGRAPHY
  - 45.11 SOCIOLOGY
- 909 SOCIOLOGY AND ANTHROPOLOGY
- 910 SOCIAL SCIENCES, N.E.C.
  - 04.03 CITY, COMMUNITY AND REGIONAL PLANNING
  - 05 AREA AND ETHNIC STUDIES
  - 43.01 CRIMINAL JUSTICE
  - 44.02 COMMUNITY SERVICES
  - 45.01 SOCIAL SCIENCES, GENERAL
  - 45.12 URBAN STUDIES
  - 45.99 SOCIAL SCIENCES, OTHER

## HEALTH FIELDS (SEE ALSO 103)

- 701 ANESTHESIOLOGY
  - 18.1003 ANESTHESIOLOGY
- 702 CARDIOLOGY
- 703 CANCER RESEARCH/ONCOLOGY
- 704 ENDOCRINOLOGY
  - 26.0605 ENDOCRINOLOGY
- 705 GASTROENTEROLOGY
- 706 HEMATOLOGY
  - 18.06 HEMATOLOGY
- 707 NEUROLOGY
  - 18.1024 NEUROLOGY
  - 26.0608 NEUROSCIENCES
- 708 OBSTETRICS AND GYNECOLOGY
  - 18.1013 OBSTETRICS AND GYNECOLOGY
- 709 OPHTHALMOLOGY
  - 18.1014 OPHTHALMOLOGY
  - 18.12 OPTOMETRY
- 710 OTORHINOLARYNGOLOGY
  - 18.1017 OTORHINOLARYNGOLOGY/OTOLARYNGOLOGY
- 711 PEDIATRICS
  - 18.1019 PEDIATRICS
  - 20.0102 CHILD DEVELOPMENT, CARE, AND GUIDANCE
- 712 PREVENTIVE MEDICINE AND COMMUNITY HEALTH
  - 18.1007 FAMILY PRACTICE
  - 18.1022 PREVENTIVE MEDICINE
  - 18.22 PUBLIC HEALTH
- 713 PSYCHIATRY
  - 18.1023 PSYCHIATRY
  - 18.1108 PSYCHIATRY/MENTAL HEALTH
- 714 PULMONARY DISEASE
- 715 RADIOLOGY
  - 18.1012 NUCLEAR MEDICINE
  - 18.1025 RADIOLOGY
  - 26.0611 RADIOBIOLOGY
- 716 SURGERY
  - 18.1004 COLON AND RECTAL SURGERY
  - 18.1011 NEUROLOGICAL SURGERY
  - 18.1016 ORTHOPEDIC
  - 18.1021 PLASTIC SURGERY
  - 18.1026 SURGERY
  - 18.1027 THORACIC SURGERY
- 717 CLINICAL MEDICINE, N.E.C.
  - 18.0299 BASIC CLINICAL HEALTH SCIENCES, OTHER
  - 18.1001 MEDICINE, GENERAL
  - 18.1005 DERMATOLOGY
  - 18.1008 GERIATRICS
  - 18.1010 INTERNAL MEDICINE
  - 18.1020 PHYSICAL MEDICINE AND REHABILITATION
  - 18.1028 UROLOGY
  - 18.1099 MEDICINE, OTHER
  - 18.13 OSTEOPATHIC MEDICINE
  - 18.15 PODIATRY
  - 30.01 BIOLOGICAL AND PHYSICAL SCIENCES
- 718 DENTAL SCIENCES
  - 18.04 DENTISTRY
  - 18.1015 ORTHODONTIC SURGERY
- 719 NURSING
  - 18.11 NURSING (EXCLUDING 18.1108, PSYCHIATRY/MENTAL HEALTH—SEE 713)
- 720 PHARMACEUTICAL SCIENCES
  - 18.14 PHARMACY
- 721 VETERINARY SCIENCES
  - 18.24 VETERINARY MEDICINE
- 722 HEALTH RELATED, N.E.C.
  - 17.0807 OCCUPATIONAL THERAPY
  - 17.0813 PHYSICAL THERAPY
  - 17.0899 REHABILITATION SERVICES, OTHER
  - 17.99 ALLIED HEALTH, OTHER
  - 18.07 HEALTH SCIENCES ADMINISTRATION
  - 18.09 MEDICAL LABORATORY
  - 18.99 HEALTH SCIENCES, OTHER
- 723 SPEECH PATHOLOGY AND AUDIOLOGY
  - 18.01 AUDIOLOGY AND SPEECH PATHOLOGY

BLANK PAGE

# SPECIALIZED PAMPHLETS AVAILABLE

In response to the particular interests expressed by many users of data from the Survey of Graduate Students and Postdoctorates in Science and Engineering, a number of pamphlets have been prepared that concentrate on various aspects of the survey results. If you would like to receive additional pamphlets, please check the appropriate boxes below and return this page with your name and address to the NSF Project Monitor:

J. G. Huckenpöhler
Program Analyst
Division of Science Resources Studies
Room L-609
National Science Foundation
1800 G Street, N.W.
Washington, D.C. 20550

---

Name: ____________________

Organization: ____________________

Street Address: ____________________

City, State, Zip: ____________________

☐ 1. Trends in graduate S&E enrollment, 1975-90
☐ 2. Enrollment status (full-time/part-time)
☐ 3. Source of major support
☐ 4. Mechanism of support
☐ 5. Sex
☐ 6. Level of Enrollment
☐ 7. Citizenship
☐ 8. Racial/ethnic background
☐ 9. Institutional highest degree granted
☐ 10. Type of institutional control
☐ 11. Geographic distribution
☐ 12. Individual institution listings
☐ 13. Postdoctorates and other nonfaculty research personnel (Doctorate-granting institutions only)
☐ 14. Historically Black Colleges and Universities
☐ 15. Land Grant Institutions
☐ 16. Engineering fields

END

7-13-92